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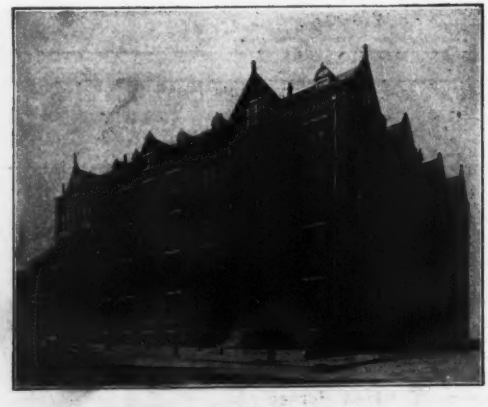

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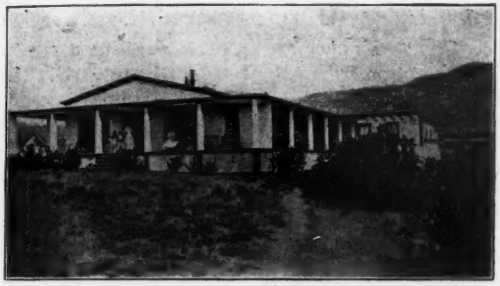

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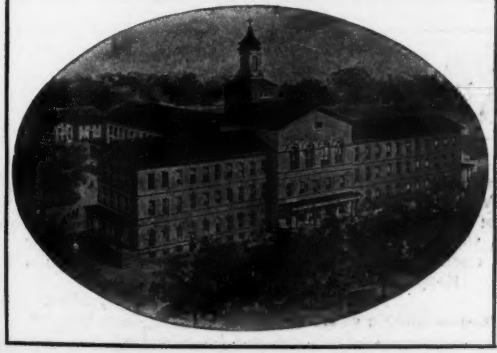

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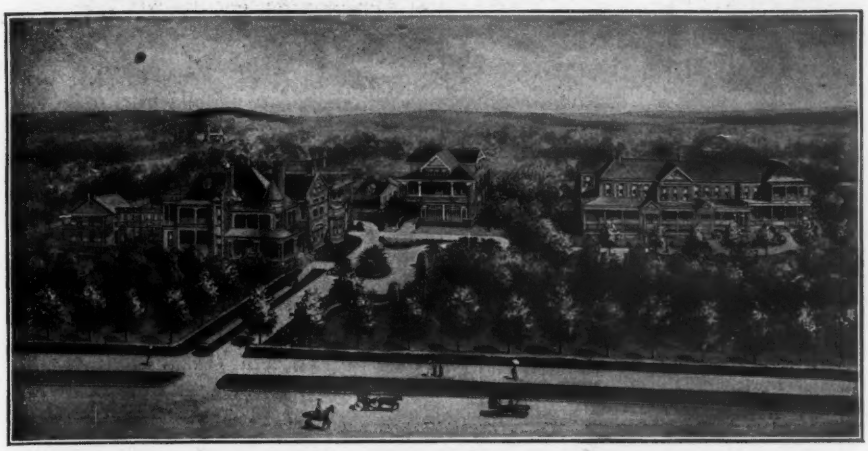

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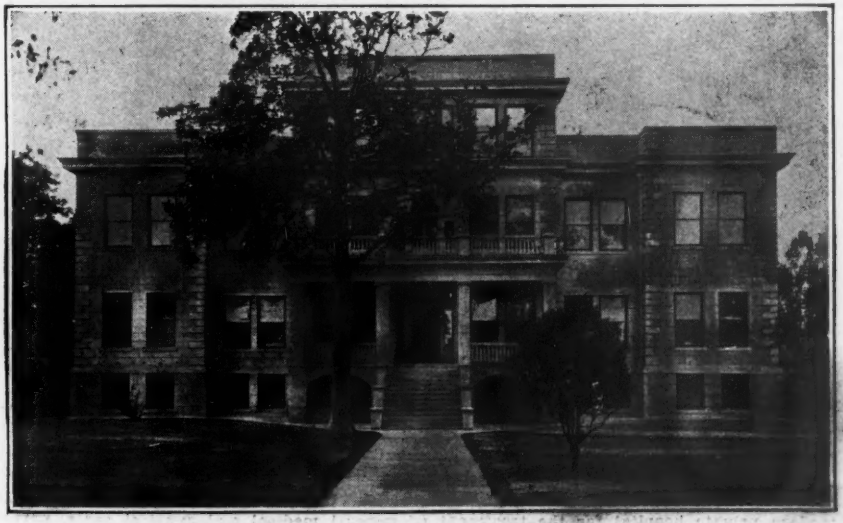

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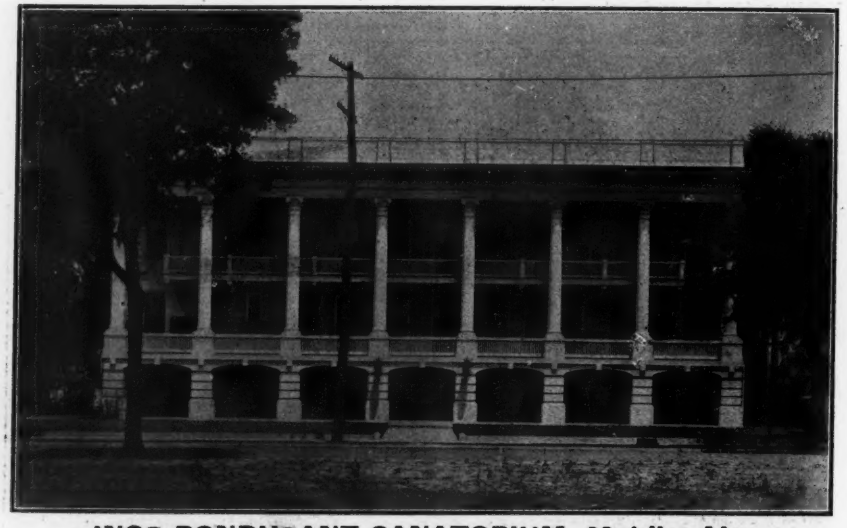

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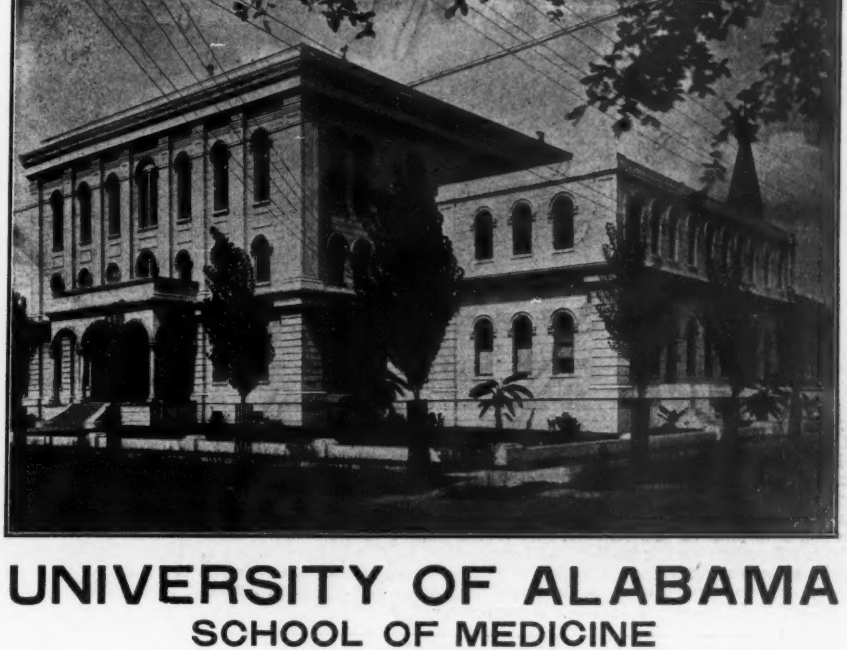

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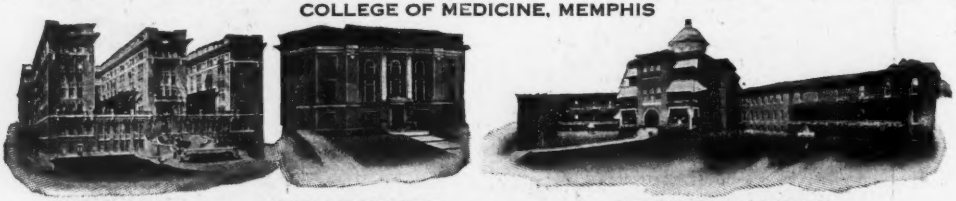

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ORIGINAL ARTICLES

THE DOCTOR AND THE COMMUNITY.*

By DR. DANIEL T. McCALL,
Mobile, Ala.

Mr. President, Members of the Medical Association of the State of Alabama, Ladies and Gentlemen: It is no small honor which has come to me, and through which I am permitted to appear in this presence as the annual orator. When I consider the many distinguished men who have stood in this place in the more than sixty years of existence of this association, I am filled with an overpowering sense of the dignity of the office, and I here confess to a keen sense of my inability to measure up to the high standard set by them.

I have chosen to speak on "The Doctor and the Community," a subject altogether old, and yet one which must have to be restated anew by every member of our profession as he enters the professional arena. It involves the whole history of our noble profession, as well as every phase of the life and work of the doctor, apart from his mere professional attainments. To those of you who have solved the problems of relationship involved, what I say will nevertheless be of interest because of the point of view, possibly slightly different from that with which you have been accustomed to consider it. To the younger members of the profession, eager to get the experiences of others with which to chart their own way, the message will not be without value and meaning, I am sure.

In our consideration of society, that is, the living of men and women together, acting out their lives in conventional ways, there are a thousand factors which enter into its warp and woof. The new science of sociology has undertaken to handle with a degree of thoroughness and attention never before attempted in this complex thing which I have just denominated as society, and man has come to know himself in a new way, by better understanding and appreciating his relation to the mass. Without stopping here to descant upon the importance and value of sociology, which I cannot refrain, however, from commending most heartily to you, it may be said that the doctor is one of the most potent and vital factors which enters into the life and affairs of man in this world. It will be the purpose of this address in a brief way to somewhat describe his training, his usefulness, his influence, what he ought to be, and with some observations on the professional future.

HISTORICAL SKETCH.

The historical records which we possess concerning the progress of medicine are scanty and uncertain. Those writers who have investigated the subject tell us that Egypt was the country in which the art of medicine, as well as the other arts of civilized life, was first cultivated with any degree of success. Here it was that medicine first advanced to the point where it became a distinct profession. The probability is that at first the priests were also the physicians. This, too, appears to have been the case with the Greeks and the Jews. In fact, when Greece had learned the

*Annual Oration before the Medical Association of the State of Alabama, Birmingham, April, 1912.

healing art from the Egyptians, the religious temples became the hospitals of the people in many cases. Whether or not the science of medicine had advanced to the extent of great usefulness, the system of diet and rest enjoyed in these hospitals was of great value to the sick, especially accompanied as it was by the cure of the soul.

At the time Herodotus visited Egypt the several branches of medicine were specialized, the monopoly being transmitted through certain families, from father to son. Certainly this custom retarded the progress of the science, and the communities in which it was practiced suffered thereby. Although we have been in the habit of attributing to Egypt the parenthood of the arts and sciences, there are some scholars who believe that the honor belongs to Assyria. These latter people have not left the memorials of their development as have the Egyptians, and hence may not be accorded what is justly theirs for lack of evidence. The priests of that nation, as in all other cases among the ancients, seem to have been the depositories of all the learning of the times, that of medicine among the rest. The dextrous application of magical arts, and such other means as tended to impress the minds of the people with a sense of their power over the operations of nature, were resorted to, while what actual knowledge they possessed was carefully concealed under the guise of mystery and superstition.

In the writings of Moses there are frequent references to the practice of medicine among the Jews; and more especially in the treatment of leprosy. The priests appear to have been the practitioners.

The art of medicine acquired the dignity of a science in Greece under the genius of a certain wise man called Hippocrates, having borrowed, as was the wont of Greece with all the arts and sciences, what learning was possessed by her neighbors. Another notable Greek who left his impress upon medicine for hundreds of years was one Chiron, who was the teacher of Aesculapius. The greatness of Chiron in the minds of the community in which he practiced and taught all the aspiring doctors of the times was evidently pre-eminent, for it is recorded in the ancient legends that his skill in practice was such that his own death was caused by Pluto's jealousy in consequence of the number of individuals whom he rescued from the grave.

Much of the treatment in those times depended upon appeals to the imagination. Some of the practices, however, which were enjoined were of a dietetic nature and were directly conducive to cleanliness and temperance, both of which were of benefit to the community.

Surgery was practiced in this development of the art of healing, and blood-letting was well established in its long career. We have no distinct evidence as to how far internal remedies were administered. Vegetable compounds were used, but we have no evidence as to what plants.

The doctors of those days made careful records on tablets of the nature of the diseases of their patients, and of the treatment employed, and these tablets were deposited in the temples, and have greatly aided modern research in learning of the development of medicine dating back to this period.

As was to be expected, rivalry sprang up between the different branches of the then established profession and new schools were put into operation.

The body was regarded as sacred by the ancients, and anatomy was practiced only upon animals until the time of Pythagoras, who devoted the greater part of his long life to the pursuit of a knowledge of nature. Among the departments of science which he explored was the structure and actions of the human frame. His custom was to travel into other countries than his own and learn of others all that was to be learned.

Acron was the first to apply philosophical reasoning to the science of medicine. At that time schools for the practice of physical de-

velopment looking to the soundness of health brought into existence the famous Greek gymnasiums, the directors of which were called gymnasiarchs, and the form of treatment defined as gymnastic. External and internal diseases were treated in these establishments by those in charge.

Another Greek who left his mark on the history of medicine was one Galen, who left behind him over two hundred treatises directly or indirectly connected with medicine. For over a thousand years the development of the science made no progress beyond the point where this great physician had rested his labors. His rank in the world of medicine has been compared with the rank of Aristotle in the world of general science. Undoubtedly he was a man of great talents and extensive acquirements. He reduced all his knowledge of facts to general theoretical principles.

From Greece the art of medicine traveled to Rome, but it was slow in becoming established, and through the priesthood and temples as originally in Egypt and Greece. For many centuries the progress of learning and science was suspended and the Dark Ages obscure all that might have been accomplished. Superstition, magic and witchcraft superseded the general advancement of medicine, and the doctor was the fakir at his zenith. With the revival of learning, with the establishing of printing, with the invention of rapid modes of travel, and with general enlightenment, the community has benefited through its doctor as never before in the world's history. All new discoveries in the laboratory, in the clinic, in the study, are the common property for the world's good, and the doctor who lives in the most remote backwoods has no longer a legitimate excuse for ignorance in his profession. Knowledge is offered him, is forced upon him by an enlightened public sentiment. The progress was slow and came down with travail and great oppression to those who were its first fruits in learning, but the wealth of its history and the primacy of its importance to society make it an interesting study for those who have the time and the inclination to explore the annals of its history.

HIS TRAINING.

Is there a man before me today who has come by his training in his profession without sacrifice? Perhaps it was not your sacrifice, but the sacrifice of the parents who stook back of you, ready to yield up the last penny of the little store that had been laid aside for the rainy day, or the dependence of age, that you might have the educational opportunities that would fit you for the noble profession you had chosen. Perhaps it was you, yourself, teaching in vacation times, stinting with food and heat and lights to eke out the small hoard so laboriously accumulated till the next vacation of your medical college, and the summer school again, with the cheap food, poor housing and meagre living in every way, until that eventful day of finals.

There are young men in this association who have striven hard for their diplomas, but their striving has gone into that great school of discipline that makes great doctors and great men. Through this struggle you have leaned to sympathize with that great bulk of humanity whose daily life spells sacrifice. Perhaps your training did not cost you the self-denial that your fellow-student paid for his, in the way of close economy, but it cost you self-denial in the way of pleasure. It cost you the midnight oil, work, fear of failure, the dig and grind, and the dig with the vim and purpose of the forester who hews down the trees for his day's task. There is no easy road to a doctor's training. The field is so broad, the responsibility so great, the profession so sacred that those who choose it dare not slight its opportunities of preparation.

HIS USEFULNESS.

In every science, and every art, in every business, and every trade, mistakes are made. They are a part of all men. But doctors practice their science and their art on *life*. With that material a mistake may be irreparable.

The confidence that the community places in its doctor is something astounding. Life, that most precious of all heritages, is entrusted into their hands every day. People may talk of the fine arts, but there is no finer art in all the world than medicine. By medicine we do not mean simply drugs, but all that belongs to the modern meaning of the word. It was the doctor who gave to the world the truth about itself, its enemies, its friends, its rules of living, and what of salvation it has today in a material sense. It was the doctor that told the community it must have fresh air to breathe, or else die of the great white plague. It was he who taught the health value of sunshine, of draining, of pure water, of exercise, of diet. It was he who taught the community how to arrest the scourges of fevers, of smallpox, of all the diseases that have ravaged the earth since the beginning.

The doctor has justified his existence, has established his usefulness, and has made himself indispensable to every community where his fellows dwell. Doctors have come to mean so much because they have come to regard their lifework as indispensable to man, and spare themselves no labor to make themselves of use. They have learned humility with their learning, and have come to care less that they make a favorable impression personally than that they know their work. These men who are the community doctors are humble because they are scourged with their professional difficulties, scourged with elusive diseases, scourged with competition and scourged with the realization of their responsibility.

But with all these things the profession is as near as any to Liberty, Equality and Fraternity. The spirit of practice gives us these, and our usefulness to the community in which we live is in proportion to our observance of the laws of this great trinity of virtues.

HIS INFLUENCE.

The advice of the doctor is respected because he is a man of thought, of character, of discretion. The tribute is a well deserved one. The average doctor is a man to be trusted. There are few men of the profession who are unworthy of confidence, and when such a one shows his head every reputable doctor ought to brand him as false to the loftiest standards of manhood. Not only among individual classes is the community doctor looked upon as a man of influence, but the world at large respects him for his very work's sake. There is no household, however exclusive, but opens its doors to him socially as well as professionally if he is worthy of his cloth. Somewhat of the influence and power that belonged to the fathers of the profession, those old Abyssinian, those Egyptian, those Greek and those Roman priests who were all powerful in the community, has lingered about the traditions of the calling of the doctor, and next to its spiritual adviser, the household, the community regards the cure of its body.

HIS STANDARDS.

Some of you have not forgotten the spirit of resentment you nourished when you sat before the examining board and rebelled against what you regarded as catch questions designed especially for your defeat that these men already in, might have the fewer competitors. Now that you know the answer to those questions you are not quite so hard on the men who propounded them, and the longer you exercise your calling the more certain you will become that the board is right in maintaining a high standard of knowledge for admission to its sacred ranks.

At English common law and the Roman civil law the right to practice medicine and surgery was not regulated by law, but was free to be engaged in by all. But the necessity of prescribing qualifications for these professions became so apparent that in the year 1422, during the reign of Henry V., Parliament passed a statute which provided heavy fines and imprisonment for practicing medicine or surgery unless the person had studied in some university and was at least a bachelor of science. As a result of this law these doctors acquired the

names or titles of physicians and surgeons. the one to prescribe drugs and medicines, the other to cure diseases by manual treatment or surgical operations. English statutes were thereafter passed relating to the same subject, and most of the American states have passed statutes prescribing qualifications to practice medicine or surgery, or even to sell drugs and medical supplies. The constitutionality of these statutes was at first assailed, it being claimed that they were unconstitutional because they unjustly discriminated in favor of some, and deprived the citizen of his property without due process of law; that they were an unauthorized denial of the citizen's right to practice a noble profession; that such regulations and restrictions could not be imposed as to the practice of medicine any more than in the case of the farmer or mechanic in the pursuit of their avocations. But it has been uniformly held by most of the state and federal courts, and by the United States Supreme Court that such laws were the valid exercise of the states' "police powers," upon the ground that they were necessary to protect the public health against quacks and fakirs. This police power of the states has been uniformly held sufficient to provide for the general welfare of the people by prescribing all such regulations as in the judgment of the legislature will secure or tend to secure them against the consequences of ignorance and incapacity, deception and fraud. Our own state has followed in line with the English parliament and the legislatures of other states, and hence a great part of the statutory law of this state, which has been made a part of the code law of this state, pertains to health and quarantine, and prescribes qualifications and examinations for those who practice the medical profession, or even that of the apothecary. These statutes provide for a state board of health, and for county boards of health, and prescribes the duties and jurisdiction of these boards, and in fact, the public health and quarantine is placed under the management of these boards of health.

It must be said to the honor of our legislature, and we believe to their judgment, that they have in a large measure enacted these laws as prepared and suggested by members of our profession, and by these medical state and county boards, so that if these laws are not what they should be, we, ourselves, are in a large measure responsible. On the other hand, if they are what they should be, we are entitled to the credit. It will be seen from an inspection of these laws that our profession is one of great honor, importance and respect; that it is even so written in the law. Hence, if the standard of the medical profession in Alabama is not what it should be, it is your duty and mine to proceed at once to make it what it ought to be.

WHAT SHOULD A DOCTOR BE?

First of all he should be a Christian. The needs of spirituality will come to him every day of his practice, the needs for giving consolation, the needs for that patience that is the peculiar possession of the man of pure and undefiled faith. He should not only have Christian tendencies, but should be a part of the religious life of his community. If he is this he cannot be a man of dissipation, a man given to vice, to habits that disqualify him for the greatest capacity of usefulness and intelligent service within the scope of his natural endowments. He should be the kind of man to whom you can entrust the most nurtured members of your household, not only in a professional way, but in the charmed circle of the home socially.

He should be careful of his dress, neat in his habits, polite in his manners, and discreet in his conversation.

The worst type of man is a gossiping doctor. The man who is entrusted with secrets of the family to which he ministers should hold those secrets as inviolate as a Mason holds his oath. To you is shown the skeleton in

the closet with confidence and with that tragic dependence that knows no other succor, and the doctor who would betray such confidences should be shut out of his guild with the same sure handed justice as is shown him who is guilty of malpractice or cloaking his murderous instincts beneath the mantle of his hon orable calling.

Too often is it the case that the successfu practitioner neglects his studies. The city doctors, with their hospital clinics have not the great need of keeping up with the advance of their profession as has the country doctor, for day by day they come in actual contact with the things that the man in the small community must learn by reading. The moment a doctor loses his keenness for his profession, lets down his ambition for doing the greatest amount of service, and doing it as well as any other man, then he is a community menace. The most dangerous man in that community may be the egotist who soon becomes the ignoramus. Indolence he cannot allow himself. Work and study without ceasing must govern the doctor's course in life, that he may be to humanity what he ought to be, an intelligent minister to its needs and a potent obstacle to the ills and sufferings with which it is threatened.

In this day of marked progressiveness, when nothing seems longer impossible, when nature's storehouse, filled with its countless treasures, is opening to the explorer its most hidden recesses; when art and science are lighting up a pathway to accomplishments which but a quarter of a century ago would have been considered, if considered at all, as idle dreams; when inventive genius in persistent pursuit of its ideas is fashioning into facts every conceivable fancy for mankind's convenience, it is a matter of pride to the doctor that the medical profession is keeping step in the modern march of progress, and by research, investigation, experiment, and scientific achievements, is equipping itself the better to fulfill its mission as a benefactor to the world.

The physician in his reveries looks out upon the immense domain of medicine and he is appalled at its magnitude. This great expanse which spreads around him in all directions, farther than one human mind can expand, is divided into numerous fields known as specialties. Some of these he notes already in a high state of cultivation, while some are hardly rid of their underbrush. As he ponders he is bewildered by their grandeur, and he wonders how so much work as is even now done could have been compassed by human hands and brain. He is impressed with the value of the profession to mankind. He is still more impressed with the burden of responsibility he sees resting upon the shoulders of the workers in many of these fields. And he himself decides to enter into this domain and to go through these fields. He would not go alone, but he invites you to go with him and there see for yourself something of the greatness of this profession, of its usefulness to mankind, and of the trials and hardships and responsibilities of its many individual members—the heroes who, in their efforts to prolong the lives of others, give up their own lives long perhaps before the allotted time.

In his dreams he can see, only a short distance in the future, the unveiling of a multitude of scientific facts that will astonish the world. "Histology is being studied as never before; biological experiments are being made by master minds; pathological processes are better understood; and always some great discovery is near at hand. In his musings he can see the results of the investigations of the great leaders of his profession in the early dawn. He believes that in the physiological properties of the white corpuscles and their nuclei, and in the blood serum, lies hidden—but no longer deeply hidden—the key to the treatment of the infectious and contagious diseases." From earth, sea and sky he exacts

aid; from the fields and the forests he draws his coadjutors; nature and nature's forces are made his co-workers. His mission is to serve, and he commands to his assistance every agent that he may make the better servant.

CONCLUSION.

And now, as I conclude, I feel that what I have endeavored in a general sense to express as to the close relationship of the doctor and the community is more sensibly evident in a specific way to the happy harmony that exists here at home, in our own great state, between our profession and all other component parts of the body politic. The laws of our state have armed the medical profession with an authority extensive, and it is a satisfactory thought that as great as is the privilege granted, the duty, just as great—devolving, and the responsibility just as potent—incumbent, have been exercised, discharged and fulfilled without abusing the authority entrusted, and with an eye single to, and an idea intent upon, and a desire ardent for the best interests and the general uplifting of the whole community.

The Alabama doctor loves the community of Alabama, for he knows himself to be a factor in a community happy, progressive and prosperous—a community whose natural resources are unsurpassed by any other community in the grand community of the Union—a community with a past cherished by us all for a glorious history, a great heritage, a grand legacy—for the heroic deeds of patriotism at home and at the battle front; for the eloquence of orators, the purity of statesmanship, the genius of literature and the accomplishments of science. A community with a present thrilled with active endeavor and pulsating with the throbs of grand efforts and glorious achievements; a community with a future spanned by a rainbow of brightest promise and portentous of possibilities beyond the fancy of the most optimistic dreamer. As doctors and as individuals we love our state, we rejoice in her progress, we stand ready to protect her interests in the details of duty demanded of our profession.

We are proud of the forward march Alabama is making in education—of her common schools, her high schools, her colleges, her state institutions—all at work, with heart and will to raise our citizenship to a higher standard of intellectual manhood and womanhood.

We are proud of our cities—Mobile, quiet, substantial, solid, steady in her growth; Montgomery, secure in the wealth of her agricultural surroundings, and her financial institutions; Birmingham, once the magic now the magnificent city, the pride of Alabama, whose surrounding resources have invited the investment of the capital of the world, which has become the home of energetic manhood drawn from every section of the Union—a community in Alabama which has adopted a son and trained him up in such a way to go that today through his accomplishments, through his sterling qualities of manhood, his strength of character, his sound doctrine of public policies, his merit as a statesman, his recognized ability as a leader, has turned the eyes of the nation upon him and through him upon the home of his adoption. We doctors in Alabama are proud to claim him as our fellow-citizen and I feel that I voice the sentiment of the medical profession all over Alabama as well as the unanimous sentiment of all patriotic Alabamians of whatever profession, avocation or trade when I say that we are proud that we live in a community as a commonwealth, which took from Kentucky him who possessed those qualities of manhood, which this commonwealth could so fashion and form and stimulate that today we as a state can offer to the Nation's consideration him who is in every way worthy and meriting the highest honor in the gift of our government. We doctors do not hesitate to say with one accord that he is our prescription to the great party of which there is no more worthy leader, as a certain cure and sure relief from past political ills and ailments, a tonic, to strengthen

the vitality of its system, a prophylactic to ward off continued defeat, and a remedy to bring the party to the healthy condition of certain victory. Like his other fellow citizens we want Underwood to be the nominee of his party and the President of the Nation.

Our interests are ever a part of Alabama's interests, and it shall be the object of our profession in the future as it has been in the past, to join hands and hearts with all other good citizens in the state in contributing aid to a higher advancement of all things necessary to place Alabama on a higher plane, and to lend our influence and earnest efforts in behalf of our great community, to the end that all hopes for full development in affairs—Educational, Moral, and Material may meet with full fruition and happy realization.

MONITOR'S ADDRESS.*

By S. W. WELCH, M.D.,
Talladega, Ala.

LADIES AND GENTLEMEN: Some years ago when the late distinguished Dr. W. M. Wilkerson was requested to read the Monitor's address, he wrote the President and asked him what he had done that he should punish him in this manner. I have thought much of that query since I set about writing this address I am reading to you tonight, and more than once I wondered if the same query would not come to me again this time from the audience. I am not given to preaching, and my relationship to King Solomon—I have been admonished—is so very remote that I do not feel justified in making a public effort to correct the faults of my brethren. I go about this day's business with considerable trepidation. Had I no fears for myself I would have some anxiety for the office of Monitor. Some years ago the lamented Marechal, the then President of this association, invited me to read the Historian's address in the City of Birmingham. I read it, and there have been no more historians in the State Medical Association from that good hour. Strange coincidence will you say? No sooner was it bruited abroad that I was to read the Mointor's address than there were heard mutterings among the powers that be for the total abrogation of all public meetings. It reminds me of an experience I had in my early professional career. I was sent for in haste to see one of the friends of my boyhood. I found him in extreme condition. "Doc," he said, very plaintively, "I am going mighty fast. I want you to sing to me." "Man alive," I said, in astonishment, "I am not in the singing business." "But, Doc," he insisted, "I am going fast; sing to me." There was nothing else to do, so I sang. He died!

I am glad to meet this audience tonight in this center of culture and push and energy and things accomplished. I want to discuss with you the ends and aims and purposes of the Alabama State Medical Association in the light of the past, the present and the future. I feel safe in saying that we have been much misunderstood from time to time by the general public as well as by some of our brethren, and I shall ask you to give me your attention while I discuss with you some of the things we have accomplished within the past few years.

The association was reorganized in the spring of 1873 in the City of Tuscaloosa, and incorporated as the State Board of Health. This action was confirmed by the General Assembly and approved by the Governor February 19, 1875. The county medical societies were constituted boards of health for their respective counties under the general super-

*Read before the Medical Association of the State of Alabama, at Birmingham, April 16-19, 1912.

vision and control of the state organization. This, briefly, with two permanent bodies, known as the College of Counsellors and a State Board of Censors, form the skeleton around which the harmonious system has been built, which, for practical working and usefulness to the state, is unexcelled by any health organization anywhere. The objects of the organization were to raise the standard of medical education, protect the public health and promote a more cordial relationship among the physicians of the state by uniting them in a common cause, whose aims and purposes were to crystallize into acts of altruism. There is no hint anywhere in the declaration of principles suggesting profit to the individual doctor or advantage to the class. The sole idea that runs through it all is the public good, and reduced to law it has made the association a strong factor in the rapid evolution toward that higher civilization that has come to the state within the last few years.

It is fitting that the first fruits of our efforts should come to the city in which we were reorganized. The Bryce Hospital for the Insane is a source of pride to every Alabamian, and when the Colony for Epileptics, authorized by the Legislature a few years ago, materializes, the usefulness of the institution will be greatly enhanced.

When the law was passed compelling every aspirant to the practice of medicine to first be examined by a board created by this association, much opposition was aroused, both in the profession and by the public. It was argued that a college faculty is the best judge of a man's fitness to practice medicine. It was further argued that those who had tried to equip themselves for this, their chosen profession, were, as a rule, poor boys; it had been a hard struggle for them to make their way through college; they had spent all of their little earnings and perhaps all the family could get together, and it was deemed a hardship, when they had a diploma, for them to then be required to appear before what might be termed a partisan board clothed with arbitrary power of saying whether they could or could not practice medicine in Alabama. It was argued that this was a free country, that a man had a right to work at anything he pleased, and the public had a right to the services of any doctor they might choose. These sound like good arguments to free America, and this was used with telling effect against the system. To render the situation more difficult, this board was very frequently importuned by the relatives and friends of applicants to pass them. Very frequently prominent physicians, members of this association, so far forgot themselves as to write letters urging the different members of the board to pass certain applicants.

The board stands between the public and all sorts of quackery, charlatanry and cults of every faith and order. It stands between the public and cheap and inefficient medical colleges, sometimes very properly termed "diploma mills." It stands between the public and the man who has not worked while in college, and who has gotten his diploma more by accident and good luck than by real merit. It must be remembered that a young doctor differs from all others just beginning their life work, in that quite frequently some of his most difficult problems come to him on the threshold of his career. His first calls are usually emergency calls, for he is generally quite easy to find. An accident befalls some useful citizen, he is bleeding to death, or his child is burned. The young man must know what to do at once or else the patient dies. To allow ignorant men to practice medicine means the hurrying of many innocent victims into eternity, and the mistakes which these men make bear the stamp of approval of the State Association. The board was created by an Act of the Legislature, and is a part of the law of the land, but we all know that a law, to be effective in a free country, must have behind it a healthy public sentiment, and it is that for which I would plead tonight. One

of the hardest fights the association has ever had was on this very issue, when the Osteopaths wanted to practice their art without being examined by the board. The fight before the General Assembly was led by a very beautiful and accomplished woman, and you know it is always hard for a mere man, though he be a law-maker, to resist the importunities of a beautiful woman. The climax was finally reached in the State Senate, when, in common parlance, it was "six and six, and Dad's deal," but Lieutenant-Governor Cunningham held the joker. Since that time a number of Osteopaths have passed satisfactory examinations before the board and have been granted a license to practice medicine—a tribute to the fairness of the Board of Examiners and a vindication of the system.

One of the first signal successes that came to the organization was in a test to which the law on quarantine was put during the yellow fever epidemic in the summer of 1897. Dr. Sanders was called to Ocean Springs, Miss., to investigate what was supposed to be an epidemic of dengue fever. He at once pronounced the disease yellow fever, a diagnosis confirmed a few days later by an expert from the Marine Hospital Service. The whole South was panic-stricken, business was demoralized, and men were scurrying to and fro, hunting places of safety from a real yellow peril. The law and the machinery were untried; all was not harmonious in the profession. There were cries on all sides to turn the situation over to the National Government, so that the Marine Hospital Service could handle it. The State Health Officer, with serene confidence in the system, gathered together his forces and went to work. There was criticism, friction and distrust, but he worked on. There were already five cases in the State of Alabama, but by prompt use of the machinery at hand they were isolated, and no other cases developed. On the other hand, the epidemic spread over all adjacent territory, and so, in 1898-99, 1900 and 1905, while the commerce of her sister states was paralyzed and "Rachel mourned her children because they were not," Alabama was completely protected, her commerce undisturbed and her people remained serenely in their homes contented and happy. Ladies and gentlemen, I have often wondered what would have become of organized medicine in the State of Alabama had the State Health Officer failed on that occasion. But the system was sound, the law was sound, and the State Health Officer, with his usual placid urbanity, met the emergency.

And so, in a hundred instances, have local outbreaks of infectious diseases been throttled on the spot. Recently a man escaped the quarantine against cerebro-spinal meningitis in Paris, Texas, came to Talladega County, contracted the disease a few days after his arrival and died. The house in which he was ill, together with all the bedding and furniture used by him while sick, was promptly burned by the county health officer. All parties exposed were isolated, and proper methods of disinfection, for the prevention of the disease, were used. No other case developed. Smallpox, diphtheria and scarlet fever, which once devastated whole communities, especially in the country districts, are now controlled with perfect success by the easy working of the system of isolation, disinfection and education. Recently the State Board has reduced the price of antitoxin for the cure of diphtheria more than half, and moreover has placed the remedy within easy reach of every citizen. Depots of deposit have been established in several places in each county, where the antitoxin is easily available to every citizen, and the indigent, who are always a menace to the public health, are treated at the expense of the state.

The county health officers worked for practically nothing during the early days of the association, looking forward to the time when the public would recognize the value of and the necessity for their work. During Governor Comer's administration their salaries were

made adequate. Recently much opposition has developed among some well-meaning people to the paying of these salaries. Listen: The life of one little child, saved from the awful death of diphtheria or scarlet fever, is worth a thousandfold more than the salary the health officer receives. You would realize this in deep anguish should you see one of your little ones slowly suffocate with diphtheria.

But aside from these higher considerations, the premiums on life insurance in Alabama are based on a fictitious death rate. It is the business of the health officer to collect the vital and mortuary statistics, and so soon as we can demonstrate that our mortuary reports are correct, it will mean the saving of millions of dollars to the citizenship of the state in the single item of life insurance premiums. So you see that from a commercial standpoint they are worth the investment in coin of the realm. Again, the improved hygiene and sanitation inculcated by the health officers will bring about results in the end which will appeal to the better class of people about our borders, and eventually bring us a better class of immigrants.

A few years ago the board established a laboratory located in the City of Montgomery, which grows in usefulness as the days go by. Today any doctor in Alabama can have blood or any other pathological specimen, including diphtheria cultures, examined free of all charge, and thus many doubtful cases are diagnosed promptly and the spread of disease thus limited.

In connection with it we have had in operation for more than three years a Pasteur Institute for the treatment of rabies. It is the first institute of its kind, so far as I know, ever established by a state. The citizens of Alabama can go to Montgomery and obtain free of all charge, barring their railroad fare and living expenses while in the city, treatment and protection from this horrible disease, which is always fatal when contracted. It costs the citizens of other states, and has cost the citizens of Alabama up to the present time, any where from three to five hundred dollars each to obtain this treatment when needed. There have been in the neighborhood of 900 cases treated by the department, with only one death.

The campaign against hookworm is now being conducted, and promises to be very far-reaching in its beneficial results. The motives which inspired the donation for this work by Mr. Rockefeller were criticized in some quarters at the outset, but I want to say that Dr. Rose, the representative of the fund, has shown the utmost liberality towards the Committee of Public Health. The work has been directed from the state health office, but the expenses have been paid by Dr. Rose. The fact remains that Alabama started the work six months after any other state, but is now away in advance of any of her sister states in the management of the work and in the ease with which the situation is being handled. Dr. Rose has been so struck with the efficiency of the work done in Alabama that he has advised the adoption by other states of the Alabama plan of administration. It has, on the whole, been a most beneficent work, and has increased the working co-efficient of hundreds of the citizenship of the state. However, the work in hand we feel is scarcely begun. This is but an entering wedge in the great sanitary development which the future holds for the South. We expect in the same manner and with the same machinery to eradicate malaria and typhoid fever and all other infectious and contagious diseases which carry into eternity thousands of our people each year.

We have had on the statute books of the state since 1909 a law permitting the establishment of a tuberculosis sanitorium, but there are so many difficulties surrounding an enterprise like this that the details have not yet been worked out. It will take years to work out a successful plan of operation. But the board is making an earnest endeavor to over-

come the difficulties in the way and a state-wide campaign will be inaugurated at the earliest possible moment.

We have accomplished these things so quietly that the average citizen has taken no notice of them, and I dare say many of our best people wonder what we are here for. We have accomplished this work because of the homogeneousness of our system of organization, yet some of our leading physicians are constantly crying out for a change. It reminds me of a friend of mine up in the hills of Talladega County, who once went to Niagara Falls. When he came well under the spell of the rush and roar and majesty of the scene, he jammed his fingers into his ears and cried out, "For heaven's sake, stop the thing." Think of it. Stop the waterfall of Niagara, just for the sake of a change.

It seems hard for some of us to realize what the real purposes of this organization are. We are not here for the gratification of personal ambitions. We are here solely for the public good. That is the only aim and the ultimate purpose of this association, and the man who unselfishly labors for this end will always be among its most prominent and useful members. Membership in the College of Counsellors and House of Delegates is simply an incident in the life work of the organization. It makes but little difference who compose either the one or the other. It makes but little difference who may be President or Vice-President or Orator. But it does matter a great deal should the homogeneousness of the great system be destroyed in the interests of Democracy or what not.

I want to call your attention, gentlemen of the association, to one thing: Those of you who are engaged in the special work of surgery are more competent to pass upon surgical matters than those of us engaged in general practice. Those of you who are engaged in work upon the eye are more competent to pass upon questions pertaining to vision. Your honesty and sincerity of purpose is never challenged. Now, does it not follow that those of us who are engaged in the study of hygiene, sanitation and medical organization know more about these features of the work than you do? Should our honesty and sincerity of purpose be questioned because our opinions diverge from your own? Be frank with yourselves. Can you study and practice surgery or some other specialty all the year around and talk medical organization for a week with some fellow at the American Medical Association or by the seashore, who himself, in all probability, has not digested his own thoughts, and then assume to know more about it than those of us who study it all the time? I beg you in all ingenuousness to think about this before you again disturb the harmony of the association by suggesting changes. Remember that the association was not organized to honor its members, but to serve the state, and any change looking to a change of purpose in the organization will tend to defeat its ultimate usefulness.

Some years ago, at a banquet of the Jefferson County Medical Society, I had the honor to respond to the toast, "The State Board of Censors." I used the expression on that occasion, "Rome had her Caesar, England her Cromwell, France her Napoleon; we have our Teddy Roosevelt, and the State Medical Society has her Billy Sanders." There was a laugh among that company, as you have laughed here tonight. My audience had not caught the suggestion that every great movement which has for its end the public good must have at its helm a mailed hand, whose wisdom, courage and devotion go unchallenged. The State Medical Association, like every other organization which succeeds in its mission, must have a leader. That leader must have courage, wisdom and devotion, and when that organization has found him it should grip him to its heart with hoops of steel. The State Medical Association has such

a leader, and I commend him to your confidence, your loyalty and your unswerving support.

Among the Iroquois Indians there is a legend of a deathless voice. Sometimes amidst the sighing of the wind among the pines, sometimes amidst the roar and majesty of the storm, sometimes amidst the rattling of the thunder and the lightning's red glare, there comes ever and anon the deathless voice of some hero gone before, calling the chieftains and braves to deeds of valor for the honor of the tribe. And so I would bid you listen tonight to the deathless voice of an Ames and a Bozeman, and a Lewis, and a Baldwin, and a Simms, and a Bryce, and a Cochran, and a Michel, and a Ketchum, and a Thigpen, and a Toole, and a Fletcher, and a Clark, and a Baldridge, and a Johnson, and a Parke, and a Furnace, and a whole host of others calling to you and to me from out the brilliant past to come forth and stand up for the defense and perpetuity of the splendid organization, which is the exponent of their high ideals and brilliant achievements.

RETARDATION: ITS CAUSES AND REMEDIES.*

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Our topic is better suited for a series of papers than for one brief exposition. It is worth while, however, to enumerate and to comment briefly upon the well-known factors in retardation of school children, although the complexity, as well as the urgency, of the problem does not diminsh. Upon the solution of the problem of retardation largely depends the success of our massive machinery for formal education, and the matter is of more practical than of merely academic importance, because retardation means veritable waste and failure in education and life. It has been estimated that sixteen per cent of educational funds throughout the country is being spent, although not altogether wasted, in behalf of children who are repeating the work of the grades, a sum of $27,000,000, spent, in fact, for doing work twice. In numerous cities the percentage of repeaters is higher than 16 per cent. No one can estimate the greater cost in units of physical, intellectual and moral failures or in terms of disappointment, sorrow and pain in the children. Retardation within the largest groups of children ever assembled together, namely, the pupils of the schools of America, is related to conditions of child labor, pauperism, insanity, race conflict, crime and degeneracy, and is, therefore, of social significance and of interest to statesmen, physicians, ministers and all citizens, as well as to educators.

That systematic study into the nature, causes and cure of retardation is imperative, seems obvious to one who reads current educational and monographic literature concerning retardation, slow progress, elimination, statistical methods and the proposed remedies. The agitation is likely to bring into prominence a host of alleged curatives, which, like the nostrums of the quack, may be useless or dangerous.

It is necessary to agree upon the meaning of the word retardation. By retardation in school is meant simply, "over age for grades." By general consent the normal ages for the school grades are respectively:

Grade 1, 6-8 years; grade 2, 7-9; grade 3, 8-10; grade 4, 9-11; grade 5, 10-12; grade 6, 11-13; grade 7, 12-14; grade 8, 13-15. If we

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assign the above meaning to the term "retardation," *i. e.*, a disparity between the ages of the children and the grades intended for them, emphasis is laid upon the general result of certain factors in school life rather than upon the recesses that bring about the result. The contention of Messrs. Greenwood and Falkner regarding the proper criterion of retardation, centers upon the question of whether we shall accept as a criterion the age-grade status or the rate of progress of the pupil. Greenwood's objection that "revolution of the earth upon its axis cannot be taken as a unit of measurement applied to the intelligence either of children or grown persons," has weight, but in view of the logical steps to be taken following the census by the age-grade method, the use of such false measures should not be charged against its advocates.

Falkner's comparisons of the actual amounts of retardation indicated both by age and by the progress standards in Boston and in Kansas City, show that the age-standard results may indicate less retardation than the progress standard, where the records of children who complete eight grades are considered. Unjustified, therefore, is the added charge that the age-grade standard causes an exaggeration of the amount of retardation. The age-grade standard of Ayres and Cornman seems entirely practical for the purpose of preliminary and quick census. It is easy and expedient, however, to compute the retardation by both methods.

Every principal or superintendent periodically should acquaint himself and the community with the extent and degree of retardation. He should ascertain periodically the number of the retarded and of other exceptional children, the extent and causes of slow progress. More and more our progressive citizens are demanding the retirement of the despicable political pedagogue who cannot deal with the technical questions of educational science, who cares more for his job than for the children. But it does not demand a high degree of ability to gather the facts of retardation, if sensible efforts are made for maintaining and gathering simple, honest records.

Since retardation is caused in part by late entrance, it is sometimes asserted that the evil of retardation is generally neutralized by rapid progress following late entrance. Appeal here should be made to fact. Systematic observations have not proved that as a rule children who enter late are able to catch up with the child who enters early, although there is a tendency for pupils who start late to make a little more rapid progress than those who enter early. Here are the records of progress of sixteen thousand New York children, each of whom started in the first grade:

Age at Entering	No. of Children	Meridian No. of Months to Complete Course
5	1,521	82
6	5,828	81
7	2,936	80
8	721	79
9	142	74
10	26	69
11	9	66
12	2	63

It is evident from the above table that a difference from one to three years in the age of entering school, on the average, enables the child who is older upon entering to gain only from one to three months in the relative time taken to complete the full course. Furthermore, throughout the country the number of children making slow progress is far greater than the number making rapid progress. Careful estimates indicate that, in the average city, about six times as many children make slow progress as there are children making rapid progress. The factor of "rapid progress," therefore, does not neutralize the evil of retardation.

The extent of this evil is amazing to citizens brought face to face with the facts for the first time. A careful survey of twenty-nine cities made in June, 1911, a survey including the records of 206,495 children, proved

that 37 per cent of all these children were retarded. For some of the cities the percentages were as follows:

Quincy Mass.	19%
Indianapolis, Ind.	29%
Topeka, Kan.	36%
Canton, Ohio	34%
Schnectady, N. Y.	44%
Milwaukee, Wis.	31%
Passaic, N. J.	51%

The extent of retardation will vary with the school and the city. Comparative statements in some current reports are misleading because of lack of uniformity in computation as regards methods and time. In a large, typical school of Nashvile, I found the average retardation to amount to 28 per cent, or to 68 per cent, respectively, according as six or seven years was considered the age of entering. In New Orleans we find the average in the schools for white pupils to be 49.6 per cent upon the six years' standard and where the basis for the census was the number of names upon the roll the day the information was obtained. The last birthday was taken as the age, a procedure that results in a slight underestimation of the amount of retardation.

An age-grade and a progress-grade census by approved methods (see U. S. Ed. Bulletin, 1911, No. 14) should be made in every school of the South every year. The reasons for this seem to demand no argument.

The responsibility for the predicament of the scores of thousands of over-age children in the schools rests partly upon the school and partly upon society, according as retardation is caused by late entrance or by slow progress in school, or by both factors.

The Russell Sage investigation in 1911 revealed in a study of 206,495 children that of every hundred retarded, 35 were retarded by late entrance, 19 because of late entrance and slow progress, and 46 on account of slow progress alone. The factors in slow progress are therefore the main causes of retardation. Excessively slow progress is not a condition affecting merely a small number of feeble-minded children, for it involves the majority of the pupils, the teachers and finance. One fifteen-year-old boy or girl in the fourth grade may become an impediment and a burden to others and may suffer also. He or she becomes out of place and finally is eliminated to join the vast throng with whom the school is a failure. Retardation is a clue also to the prevalence of sickness and physical defects, and may indicate shifting from school to school, absences, lack of interest, poor teaching and sometimes the stress of deplorable home conditions.

About 3 per cent of the pupils in city school systems have been found mentally defective, in the sense of backwardness and of mental arrest. Here the small number of morons, imbeciles and even idiots help to swell the number of the technically retarded. If slow progress be correlated with extreme individual variation in the matter of mental functions in such cases then this is a matter for careful and sympathetic investigation by means of physical and mental tests, supplemented by a knowledge of the history and environment of the child—a work that should be undertaken by skilled and kind hands.

Feeble-mindedness is a condition difficult of exact definition. We find the condition recognized by the Orientals, the Brazilians, the Indians, the Greeks, etc. The early work of Dr. Itard and of Dr. Seguin with mental defectives is well known. Nosworthy, in the Columbia University monograph upon the "Psychology of Mentally Deficient Children," has printed a convenient summary of definitions and classifications concerning the feeble-minded by a score of authors, including Barr, Kraepelin, Kerlin, Tuke, Voisin, Seguin, Maudsley, Clouston, Galton, Johnson, Wylie, Kelly, Blackstone, etc. "It is difficult to find any quantitative description of the mental and physical make-up of defectives;" "we find scattered observations of single cases in medical records and the reports of physicians, which are concerned chiefly with causes for idiocy and the accompanying brain conditions,

with vague generalizations about defectives as a whole, and with few or no facts to support them," complains this pioneer investigator.

That distinctions must be made between backward children who can be cared for in the public schools, and those who cannot, is indicated by a glance at the classification suggested by Barr:

Asylum care	1. Profound idiots	Apathetic
		Excitable
	2. Superficial idiots	Apathetic
		Excitable
	3. Idio-imbecile	
Custodial life	4. Moral imbecile	Low grade
		Middle grade
		High grade
Apprenticeship and colony life	5. Low grade imbecile	
	6. Middle grade imbecile	
	7. High grade imbecile	
Trained for a place in the world	8. Backward or mentally feeble	

In recognition of this distinction, Messrs. Witmer, Ayres and Van Sickle, educational experts, have offered the following tentative but comprehensive grouping to assist and clarify the thoughts of those interested in the pedagogical treatment of exceptional children who, of course, include the feeble-minded.

I. INSTITUTIONAL CASES.

(To be dismissed from the oversight and care of the public school authorities.)

1. Morally insane children.
2. Violently insane children.
3. Demented children.
4. All feeble-minded children below the grade of middle grade imbecile. (Barr's classification.
5. High grade moral imbeciles.
6. Severe cases of epilepsy.
7. Cases of contagious and infectious diseases. (Some to be dismissed temporarily; some for prolonged periods.)
8. Children helplessly crippled or suffering from revolting physical deformity.

2. CHILDREN FOR SPECIAL CLASSES OR SPECIAL INSTRUCTION IN THE PUBLIC SCHOOLS.

1. Foreign.
2. Late entering.
3. Backward but capable of rapid restoration to normal grade.
4. Dull and feebly gifted.
5. Children requiring vocational training.
6. Children of precocious physical development, especially of precocious sex development.
7. Exceptionally gifted or able children.
8. Children suffering from various physical defects of minor character but interfering with their progress and unfitting them temporarily or permanently for the grades.
9. Speech cases.
10. Social cases; those whose retardation is chiefly due to home conditions calling for the services of a social visitor as well as a special teacher.

3. CHILDREN OF UNCERTAIN CLASSIFICATION, INSTITUTIONAL OR SPECIAL CASES.

1. Blind and semi-blind.
2. Deaf and semi-deaf.
3. Delinquents, including persistent truants.
4. High grade imbeciles. (Barr's classification.)
5. All feeble-minded children of higher grade than high grade imbeciles.
6. Crippled children.
7. Children suffering from epilepsy in mild degree or from nervous or other diseases rendering them difficult or improper members of ordinary classes.

It is easy to think of many possible causes of slow progress and retardation. Unfortunately opinion, guess-work, debate or indifference have often either paralyzed our efforts to ascertain the true causes or led us into reform efforts of the crude kind. Despite the lives and the vast sums of money at stake in education, we do not always rely upon quantitative measurement as we would in less serious undertakings of business.

It does not suffice to discover the causative factors of retardation in a school system merely to select a few unfortunate children and subject these alone to searching investigation. We need investigations both upon promoted and non-promoted pupils, so that comparisons will disclose the actual causes operative for retardation in a particular school or system. The following abbreviated outline indicates the scope of an investigation that would certainly help us both to discover the retarding influences and to seek intelligently for remedies.

RECORDS OF PROMOTED AND NON-PROMOTED PUPILS.

	Number among children promoted at end of year	Number among children not promoted
Boys	.....	.....
Girls	.....	.....
Average age	.....	.....
Average days attended	.....	.....

From non-English-speaking families	.....	.....
Foreign born	.....	.....
Suffering from malnutrition	.....	.....
Mentally defective (a) (b) (c) (d)	.....	.....
Defective vision	.....	.....
Defective hearing	.....	.....
Adenoids	.....	.....
Other throat troubles	.....	.....
Enlarged glands	.....	.....
Defective teeth	.....	.....
Other defects (a) (b) (c) (d).	.....	.....
Home environment	.....	.....

Grade—— School—— Teacher—— Date——

Irregularities in attendance are a cause of slow progress, and the cause is obscured in reports which base percentages of attendance upon average enrollment or even average attendance. Ayres' calculations for duration of attendance, for one-fourth, less than one-half, less than three-fourths, and more than three-fourths of the year, show that in many cities less than three-fourths of the children enrolled continue in attendance three-fourths of the year. Persistent disclosure of status of actual attendance by reliable statistical methods might aid to bring the school and the community into better cooperation and therefore lessen the evil of irregularity in attendance by destroying complacency over existing conditions.

Related to slow progress is elimination, which is excessive at the age of fourteen and fifteen. Though a boy may enter late, say at nine years, if he is retarded he will probably drop out at fourteen. Age has been found to be a strong factor in the matter of elimination. The studies of Thorndike and of Ayres vividly exhibit the increasing elimination from the first grade through the high school. Stated conservatively, the tendency in city school systems of America "is to carry all of the children through the fifth grade, half of them to the final elementary grade, and one in ten to the final year of the high school."

The following tables show the percentage of students enrolled in the elementary schools of New Orleans and also percentages for average American cities, as published by the superintendent in New Orleans:

	Boys 1910-11	Girls 1910-11	% 1910-11	Aver. % 386 Cities in U. S.
First Grade	3,546	3,133	23.0	21.21
Second Grade ...	2,759	2,410	18.0	15.39
Third Grade	2,465	2,321	16.5	14.73
Fourth Grade ...	2,166	2,250	15.6	13.61
Fifth Grade	1,436	1,672	10.0	11.75
Sixth Grade	940	1,291	7.1	9.83
Seventh Grade ..	581	926	5.2	7.84
Eighth Grade ...	361	706	3.6	5.69
Total	14,254	14,709		

In all of these matters we need constant getting of reliable data in every city as a chart for our efforts at amelioration. It is important for us to secure the facts in each community as accurately and as soon as possible. For example, if experience shows that one in every 500 of actually feeble-minded needs protection, segregation, study, and, if unprotected, training in special institutions—then we must find such of these unfortunates as appear in the lower grades and treat these children with the greatest of care and most exact discrimination. Once the number and identity of the technically retarded is known, it is possible to sift out the various kinds of retardation, and in these cases of extremely sub-normal children, there should be entire and organized cooperation between physician, teacher, consulting psychologist, sociologist and parent. The work of research in behalf of the subnormal child should be undertaken by our colleges and universities, and also by educational laboratories maintained by school boards and manned by specialists. Organizations of this kind are effective in Chicago, Philadelphia and New York, and the movement is beginning in the South. It is expected that the new psychological laboratory being established at the H. Sophie Newcomb Memorial College, of Tulane University, may find a place for this kind of work in the largest city in the South. An opportunity in many cities is open for cooperation in behalf of the unfortunate child, the feeble-minded, the truant, the incorrigible, upon the part of physicians, trained psychologists and teachers and in connection with

the schools, juvenile courts and individuals.

As important as is the discovery in early years of the congenitally feeble-minded, yet the institutional provision for protecting such boys and girls from evil-doers and evil-doing, also is of grave significance. Such individuals can never complete the work of the grades. Under the proper environment they may be trained to manual activities in part yielding self-support. Orphanages, pauper houses, insane asylums, jails, etc., are improper and unsafe places for the feeble-minded child and adult. Their custody in suitable institutions, such as that at Vineland, N. J., relieves the schools of their troublesome presence and makes possible a degree of happiness and of self-support for them. There, too, without injury, they are made subjects of psychological study; they there are segregated and society is protected from the menace of men and women with strong impulses, weak inhibitions and feeble intelligence. Goddard's charts showing ancestry and progeny of typical cases of this class are impelling evidence that we need more and better organized efforts at research, as described, and also that the state, or private philanthropy, should establish training schools for the feeble-minded, for the fourfold object of: (1) segregation, (2) research, (3) self-support (4) and humane care.

The following chart represents the results of one such study upon the family connections of one of these children.

When one contemplates the number of such people of both sexes who fill the long caravan that passes annually into jails, houses of prostitution, or who live abroad as social parasites, one would think that our statesmanship in the South would at once provide both for the discovery of this hopeless condition early in life among our massed children, and also for the scientific care and segregation of these unfit beings.

Because ill-health and physical defect are related to retardation and general development of the child, the school today needs help from the best physicians. Adequate medical inspection of school-houses and of school children, by specially trained physicians and nurses, has never been abandoned where once tried in large cities. But there is a dearth of doctors who know educational science. This is due to the fact that doctors are not trained as teachers, and also to the fact that most medical students in America have relatively less academic training than students in other than medical schools. For example, the percentages of students having a literary degree are as follows for law, medical and theological students (U. S. Education Report, 1910, Vol. 2, page 1,017):

	Schools	Students	No. Having Literary Degree	%
Theological	184	11,012	3,064	28
Law	114	19,567	4,107	21
Medical	135	21,394	1,883	9

The increasing and united activities of bogus health movements, mind-cures, medical cults and faddists, in their efforts to modify and even prevent state control of health measures, is added reason for the choice only of specially trained physicians in dealing with our school children. And the noble medical profession should see to it that not one child suffers because of lack of money to pay.

It is a gratifying symptom that such institutions as the University of Pennsylvania and the Tulane University of Louisiana are offering special courses in school hygiene for physicians and other students. An actual affiliation of courses in the medical and in the educational departments of Tulane University is now being effected by Professors Wellman and Hill for the work in hygiene.

With all our training of teachers, let us not omit to train them to conserve the physical and mental health of the child and of themselves. Preventable and remediable physical conditions cause some of our retardation. The states should in our normal school demand courses in school hygiene for prospective teachers, *i. e.*, (a) hygiene of the child, (b) of instruction, and (c) of administration. In the case of one

public normal school of the South, for years school hygiene, a persistent candidate for the required course of study intended for elementary teachers, met defeat to give place to trigonometry. For a normal school to neglect accurate instruction by trained men and women in school hygiene in its scientific aspects is a violation of sound pedagogy, and often means actual diversion of public funds to useless ends. Many obvious things need to be done at once to safeguard the health of pupils and teachers, such as building of school houses to relieve congestion, improvements of illumination and heating, removal of the common drinking cup, sanitation of closets, and the installation of screens where flies and mosquitoes abound.

Too much work in the grades is one cause of retardation. Available figures indicate that in a score of cities it takes more than eight years for the average child to complete eight grades. This is a condition significant because it points plainly in such cases to the need of adjustment of courses of studies and of methods to the capacities of the average rather than of the brighter pupils. Flexible grading, the Cambridge plan, the Batavia plan, reduction of passing limit, reduction of size of classroom mass, semi-annual or quarterly promotions, free electives, special credits for high quality of work, classification, the assignment of skilled and well-paid teachers to the lower, crowded grades rather than assignment of tyros in teaching, separation of boys and girls, more emphasis upon old-fashioned virtues of industry, the use of the rod, or, on the other hand, a soft, pink-tea type of pedagogy—are samples of various remedies proposed to facilitate progress and promotion—remedies some of which are good, some bad.

By the way of summary, let us single out nine concrete measures which are worthy of serious consideration in seeking the causes and applying the remedies for retardation:

(1) Provision for regular and scientific tabulation of the number of the retarded, of those making slow progress, of the repeaters, and of the beginners in every school in the respective states. Permanent and accumulative records should form an essential part of the system. Here exists an opportunity for state superintendents of the South to emulate upon a wide scale the beginnings made by progressive city superintendents of the South.

(2) Adequate medical inspection, utilizing physicians and skilled nurses with pedagogical training and with attention to certain tried health measures such as open air schools, baths and supervised playgrounds.

(3) Educational laboratories for the study and observation of exceptional children, with the cooperation of skilled physicians, trained psychologists, teachers and parents.

(4) Special teachers, special classes and day schools for backward and disciplinary cases.

(5) The control of the increase of defective minds and of criminals by the permanent segregation of imbeciles and feeble-minded in institutions where they may receive kindness, some training in self-support by industrial activity and be utilized for scientific research.

(6) Normal school instruction in school hygiene in its modern aspects by educational specialists and cooperation in certain courses by medical and educational departments of modern universities.

(7) Compulsory education laws which will adjust the permissible age for leaving school to the length of the course of study intended.

(8) Campaigns of education to arouse and direct a sane sentiment in behalf of our schools and the cooperation of parents and citizens. This should be undertaken by responsible persons through the press, general literature and lectures.

(9) Publicity of abuses which long remain neglected or unremoved. The public schools belong to the people, not to boards, superintendents or principals, societies or churches, and the people have a right to know the facts, but let us protect the people from the muck-

raker, or the sensationalist seeking only an avenue of self-exploitation. A persistent publicity of the necessary facts in regard to our school business, facts got fairly, periodically, should in the long run secure deeper interest in, and better financial support for, our efforts gradually to change thousands of children into men and women of the best human types.

DUPLEX UTERUS.

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and
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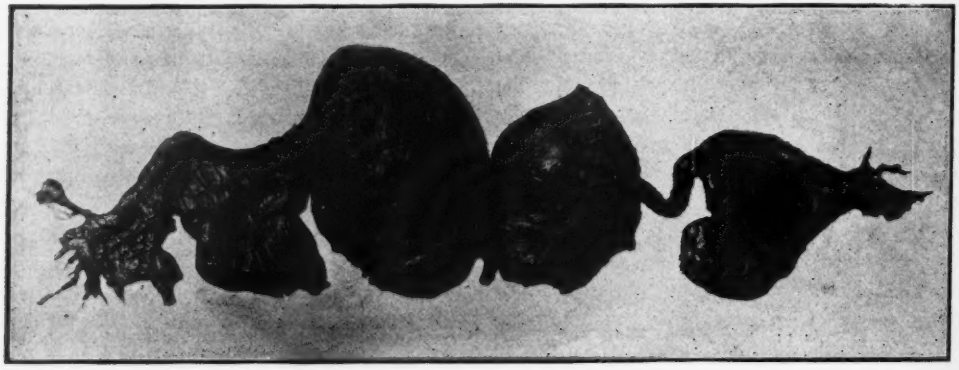
Duplex uterus (or uterus didelphys) is an anomaly due to a faulty coalescence of the lower portion of the Mullerian ducts. The interruption in development takes place before the eighth week of fetal life, and such cases are usually, though not always, associated with a double vagina, which also results from an arrested coalescence of these ducts.

usually patent throughout and continuous with the patent cavity of its oviduct above and cervical canal below. There is usually a faulty development of one or more of the adnexa.

As a result of the presence of duplex uterus and of faults in its development, we find a tendency to several pathological conditions, the more common of which is hematocolpos, owing



PHOTOGRAPH FROM ACTUAL SPECIMEN, TWO-THIRDS ACTUAL SIZE.

The essential features in a case of true duplex uterus are the presence of two distinct uterine and cervical bodies united at the cervix, each uterine body possessing an oviduct, ovary, broad and round ligament, which are given off from the outer surface of each uterine body at the normal points of origin. There are no similar structures on the median aspects of the uterine bodies. Each uterine cavity is

to the stenosis of the cervix, double pregnancy with dystocia, and, occasionally, menorrhagia.

The following case is of interest, because of the persistent menorrhagia and the presence of all the features required in a specimen of true double uterus.

Patient—Aged 46, white; the family history and past history are unimportant in relation to the present illness. Menstruation began with

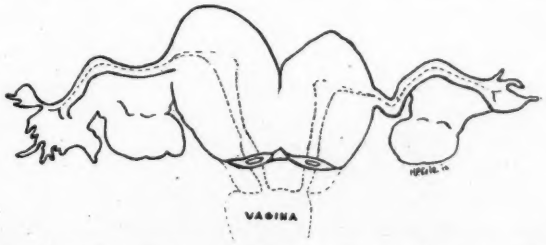
a normal onset in her thirteenth year. The patient was married at the age of twenty-one and has given normal birth to five healthy children at term, after normal pregnancies. The oldest child is twenty-four and the youngest eight years of age. There has been no history of abortion or miscarriage.

Present Illness.—The patient has had menorrhagia for three years. During the first year there was an excessive menstruation for fifteen to twenty days, occurring several times, at the normal menstrual period. This has become more constant during the past year and has confined the patient to her bed a large portion of the time for the past several months. There has been some loss of weight.

February 18, 1912—The patient is a healthy, well-nourished woman, presenting a slight degree of anemia. The general examination is normal, with the exception of discomfort on pressure in the lower right side of the abdomen. The patient presents perfectly normal external genitalia. There is a slight degree of relaxation of the vaginal outlet. The vagina is normal, deep and possesses a wide vault. The cervix is normal in size, projects but slightly into the vault and is displaced to the left by a mass which is connected with the right side of the cervical body and extends to the right and above the vault. This mass apparently opens into the upper right hand portion of the vault by a sinus, the orifice of which is 2 m.m. in diameter, is red and has a cyst 4 m.m. in diameter on its posterior border. The body of the uterus is about normal in size, in anteposition and forced to the left of the pelvis by a slightly smaller, firm and more fixed mass which points forward and to the right. This is connected with the mass that extends to the right from the cervix and apparently opens into the vagina by the small fistula. There is a bloody vaginal discharge apparently from the cervical os.

Diagnosis—Menorrhagia, carcinoma uteri, myoma uteri.

Operation, February 21, 1912. Supra vaginal hysterectomy and bilateral salpingo-oophorectomy. Upon exposing the pelvic structures a normal uterine body was seen to the left presenting a normal oviduct, ovary, round and broad ligament on its left border. To the right and projecting forward was a smaller uterine body firmly fixed and projecting forward toward the base of the bladder and united to the left uterine body at the cervical portion. On the right border of this uterine body there was a normal oviduct, a normal senile ovary and a shortened round and broad ligament. The two uteri with the tubes and ovaries were removed with some difficulty, owing to the wide expanse of the cervical tissue. The patient made a normal recovery.



Outline Showing Continuation of Tubal into Uterine Canals and Both Emptying into a Single Vagina by Distinct Cervical Opening.

Pathologic Examination—The left uterine body was practically normal in shape and outline, was slightly anteflexed and was 7 by 4.5 by 3 cm. in diameter. From its left cornu there projected a normal fallopian tube 7 cm. long, 5 mm. in diameter in its inner half and 8 mm. in diameter in its outer half. The fimbriated extremity was normal and patent.

At the normal situation a normal round ligament arose from the fundus. There was no evidence of a uterine cornu or broad ligament on the right or median border. On the posterior surface of the left broad ligament there was at the normal situation an ovary 4 by 2 by 1.5 cm. in diameter. This ovary contained two small corpus luteum cysts and a recently ruptured Graafian follicle. The right and smaller uterine body was 5 by 3.5 by 3.5 cm. in diameter. The fundus terminated in a pointed extremity. This corpus was not anteflexed or flattened anteroposteriorly and was fixed to the left uterine body at the cervical portion. From its right cornu there extended a fallopian tube 8 cm. long, 5 mm. in diameter in its inner third and 7 mm. in its outer two-thirds. Its fimbriated extremity was normal and patent, slightly smaller than that of the left fallopian tube. There was a normal round ligament extending from the usual situation below the uterine origin of the tube. On the posterior wall of the right broad ligament in the usual situation there was an ovary 2.5 by 2 cm. in diameter. This contained no cystic structures, was dull white in color and possessed a thickened epithelium. The right uterine body presented no evidence of a tube, ovary, round or broad ligament on its left median border. On section there was a normal-appearing uterine cavity in each uterine body opening from its outer cornual extremity into the tubal canal. The tubal canals were patent throughout. Below, the uterine canals emptied apparently into the canals of their respective cervices. The uterine musculature and endometrium of each uterine body was apparently normal, that of the smaller body being slightly thinner than that of the larger one. There was no cornual depression to the median side of the uterine cavity in either uterine body.

There was a myoma 2 c.m. in diameter in the inner anterior wall of the cervical portion of the right uterine body. There was a similar nodule in the posterior wall of this body slightly above the cervical portion.

Microscopic examination of sections taken from the wall of each uterine body disclosed normal musculature and endometrium and typical myoma formation in the two nodules. There was no evidence of carcinoma. Sections from the left ovary disclosed normal functionating ovarian tissues and the presence of a recently ruptured Graafian follicle. Sections from the right ovary disclosed atrophic change and a thickened epithelium.

Postoperative Diagnosis—Duplex uterus (dideyphys), myomata uteri and senile atrophy of the right ovary.

THE CYSTOSCOPE AS AN AID TO DIAGNOSIS.*

By J. A. McDONALD, M.D.,
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With the advent of the cystoscope the diagnosis of bladder lesions has been very much simplified. In making a cystoscopic examination strict asepsis should be observed, the instruments should be washed in warm water and green soap; after washing immerse in a carbolic acid solution 1 to 40 and leave for several minutes; then transfer to solution of sterile water. The penis and scrotum should be sterilized and the legs, thighs and abdomen should be covered with sterilized towels. Before introducing the cystoscope bring the lamp to the required degree of illumination, then switch off the current. The introducing of the

*Read before the Southern Medical Association, Hattiesburg, Miss., November 12-14, 1911.

cystoscope is similar to the passing of a sound, except the beak being shorter requires a greater depression of the ocular end to make it enter the bladder. After the instrument has entered the bladder and any urine which may have been present is withdrawn, irrigate the bladder with a boric acid solution until the return fluid is clear; then fill the bladder with 6 to 8 ounces of the solution, dry connection and connect the instrument with the current. In diagnosticating pathological lesions, the bladder should be closely studied. First note the condition of the mucous membrane, as to its color, smoothness and glistening appearance. The presence of ulcers, foreign bodies, trabuculae, diverticulae and new growths should be carefully noted. Also the appearance of the spincter, prostate and trigone. The ureteral orifices should be located and the mucous membrane immediately around them studied. The force and volume of the swirl of urine discharged should also be noted.

Normal Bladder—In looking at a normal bladder, the first picture we see after the introduction of the cystoscope is a golden yellow field traversed by a fine network of blood vessels. This is the bladder wall between the vesical sphincter and the summit of the bladder. Withdraw the instrument, keeping in the median line with the beak pointing up, until you see a dark red area and the field is divided into a red and yellow surface. The red is an internal vesical sphincter. By rotating the instrument 180 degrees we view posterior surface of the bladder wall and the trigone. This surface is the most frequent seat of pathological lesions and should be scrutinized carefully. We will note some of the pathological changes which may be observed—first, trabeculation, or hypertrophy of the muscular tissue. This is due to the overwork of the bladder in its efforts to empty itself and occurs in patients suffering from prostatic enlargements, strictures, or neuroses.

Cystitis—This presents a variety of pictures. In acute cystitis it is difficult to cystoscope a patient on account of the pair, and it should not be done unless there are urgent reasons for the examination. When it is possible to examine, the mucous membrane is seen a brilliant scarlet with branching lines, marking the course of the distended blood vessels, which bleed readily. The surface of the mucous membrane has lost its polish, is ragged and velvety and has flakes of lymph adhering to it. In severe cases the epithelium is detached leaving erosions. In chronic cystitis the lesions are more marked. The surface of the mucous membrane is dark or slate colored. The erosions are deeper, sometimes forming ulcers. In acute cystitis the blood vessels are dilated; in the chronic form they are indistinct and may not be recognized.

Tubercular Cystitis—These patients are difficult to cystoscope; the pain is severe if the inflammation is extensive. The earliest evidence is the redness of the mucous membrane at the base of the bladder in the vicinity of one of the ureteral openings. This is due to the fact that tuberculosis of the bladder generally originates in the kidney. Tubercles are seen as greyish nodules which break down and form ulcers. These ulcers may be round or oval, large or small. One area may be involved with well developed tubercular lesions and the other part remain perfectly normal.

Hyperthrophy of the prostate may be viewed if not too large to prevent the introduction of the instrument. If the two lateral lobes are enlarged, two distinct swellings are seen, with a notch between. If it is the median lobe which is enlarged the lateral lobe will not be seen.

Vesical calculi may be seen if not lodged in a diverticulum, or so covered with pus and mucous that their recognition is impossible. We should note the size, number and color of the stones. A gaping, golf-like appearance of the ureteral orifice is sometimes seen when a stone is present in the ureter.

New growths are usually seen through the cystoscope. The following points should be

noted: First, the site of the growth, whether single or multiple; whether the surface is covered with mucous membrane or ulcerated; whether sessile or pedunculated. If cystitis is present the median may be clouded and the pictures obscured.

Polypi are the most easily diagnosticated. They usually have a firm pedicle with a soft, ragged top. They are usually singular, but may be multiple. They cause severe hemorrhage but the bleeding is not constant. Malignant growths have a broad base, may be ulcerated, and bleed easily, and the hemorrhage is apt to be continuous. Patient is usually in advanced age. Fibrous growths are smooth and globular and may be covered with oedematous mucous membrane. Tumors which protrude far into the cavity usually have a broad base.

Foreign bodies are more frequently found in a female bladder and consist of smooth objects, such as pencils, needles, hair pins, etc. Examine in the same manner as for stones. Should it be desired to examine the urine separately from each kidney it will be necessary to catheterize the ureters. This is not so easy to do, but after constant practice on a phantom bladder, and a study of the human bladder, so as to be able to recognize the ureters, it becomes comparatively easy.

SOME EXPERIENCES IN OPERATING IN INGUINAL HERNIA.

By JOHN SMYTH, M.D.,
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The object of this paper is to report three cases of indirect inguinal hernia, presenting peculiarities of the sac, with some complications rendering operation more difficult or tedious.

Case 1.—H. C. M., male, white, aged 20 years; occupation, farmer; nativity, Louisiana.

Says he was ruptured on left side when a child and was apparently cured by truss. About October, 1900, while playing baseball at school, he noticed pain in left groin, accompanied by feeling of nausea; does not remember any lump at that time. Pain recurred occasionally, especially when taking much exercise. About two years later noticed lump in left groin, which has gradually increased without much pain. Patient has worn truss ever since, though it does not now control the hernia. When the patient was seen May 2, 1906, he presented a large indirect inguinal hernia on the left side which, upon removing the truss, descended into the scrotum. The patient entered Hotel Dieu May 5, and I operated May 7, assisted by *Dr. P. B. Salatich.* Firm adhesions of the sac to surrounding tissue were encountered. In separating the main sac a finger like peritoneal pouch about three inches long and one inch in diameter was isolated in front of and communicating with the main sac, about one inch below the ext. ring. This sac contained omentum only, which had apparently become sufficiently adherent to the sac to prevent descent of the bowel. The main sac extended into the scrotum and contained bowel and testicle. These sacs are shown in Figure 1. Sacs were freed, excised, the common neck sutured and the operation completed by the Bassini method. Uneventful recovery followed, and the patient has had no recurrence now, after nearly four and one-half years.

Case 2.—E. W. C., male, colored, aged 43; occupation, laborer; nativity, Alabama.

At the age of eleven years he noticed a swelling on the right side when he coughed or strained. About two years later the swelling extended into the scrotum. He wore a truss until October 30, 1897, when he was operated upon by a surgeon in Florida. He

was confined to the bed for seventy-five days, but, upon returning to work, the hernia promptly recurred. He again resorted to the truss, which he was wearing when he came to the Chairty Hospital. Examination showed a large scrotal hernia, which could not be completely reduced.

Assisted by Messrs. Brown, Hayes, King and Leidenheimer, internes at the Charity Hospital, I operated December 14, 1909. Upon cutting through the skin, the mass presenting proved to be coils of intestines, not covered by a sac, but surrounded by firm adhesions. The ext. oblique aponeurosis was then slit up and an effort made to pull the herniated mass downward, but this was prevented by dense adhesions about the internal ring, in all probability resulting from the previous operation. Upon breaking these adhesions, the gut came down easily, showing a marked constriction, above which healthy parietal peritoneum could be demonstrated. Examination was then made downward, and a sac was found in the scrotum containing intestines and the testicle behind; this sac was strongly adherent to the intestinal coils which first protruded. In breaking up the adhesions, which was difficult and tedious, a small laceration was made in the bowel; this was closed with No. 9 silk and 0 catgut. The relation of these two loops of the intestines to each other and the sac is shown in Figure 2.

After carefully mobilizing the herniated bowel and omentum and replacing them into the abdominal cavity traction was made on the sac, in order to facilitate closure of the upper angle of the opening, left by the anterior intestinal mass. This done, the remaining sac was sutured in the usual manner and the stump returned to the abdominal cavity, and the operation completed by the *Bassini* method. Patient suffered from considerable shock, but gradually reacted and made a good recovery. When last heard from, August 26 of the year, he was in good health, and said there was no evidence of return of the rupture.

Case 3.—A. G., mulatto, male, age 16 years. Admitted to the Chairty Hospital August 30, 1910. When one year old his mother noticed a lump in left inguinal region, which became more pronounced as he grew older. He has worn a truss about seven years, since which his mother noticed that the left side of the scrotum was smaller than the right and did not contain a testicle.

Examination showed a mass in the left inguinal region, giving impulse on coughing, and above and external to the ring a small hard lump simulating an enlarged lymphatic gland adherent and immobile.

I operated September 6, assisted by Messrs. David, Wise and Fortier, internes at the Charity Hospital.

A mass covered by peritoneum was found immediately beneath the skin above and external to the ext. ring resting upon and adherent to the aponeurosis of external oblique. A short, empty, peritoneal pouch was found extending downward for a little distance toward the scrotum, the cord making exit at the ext. ring turned upward and outward to join the mass above which, upon opening the sac, proved to be a testis adherent to the finger of omentum, as shown in Figure 3.
from the ext. oblique aponeurosis and the exfollowing inquinal herniotomy are due to the cess excised, leaving a portion around the testis as a tunic.

The cord was found too short even after breaking up all adhesions around inner margin of internal ring, so all but the vas was excised, after which the testis could be brought down with comparative ease to its proper position in the scrotum; the herniaplasty was completed by the *Ferguson Andrews* method, and the patient made an uneventful recovery.

CONCLUSION.

(1) The sac in Case 1 is probably a variety of the pantaloon sac reported by *Eisendrath* and others.

This kind of sac may account for some of the failures to cure hernia by operation, as

Eisendrath says, "No doubt many recurrences following inquinal herniotomy are due to the fact that a diverticulum or second sac has been overlooked."

(2) The condition in Case No. 2 is an artificial one, and was evidently the result of a failure to securely close the neck of sac in the previous operation, and shows the necessity of extreme caution in operating in cases which have already been subjected to operation.

(3) It will be readily seen that the condition in Case No. 3 was the result of an effort at reduction of the hernia, in which the position of the testis was lost sight of or ignored. The truss applied at that time caused sufficient traumatism to produce adhesions which imprisoned the testicle in the upward reflection of the sac, and the enterocele, or hernia proper, recurred in the lower peritoneal pouch, possibly another case of pantaloon sac.

Owing to the extreme sensitiveness of the testicle and its practical immobilization by adhesion, it might easily have been mistaken for an inflamed lymph gland associated with hernia and cryptorchidism.

EDEMA OF THE GLOTTIS.*

By ARCHIBALD C. LEWIS, M.D.,
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Any disease having a sudden onset, rapid course and high mortality is necessarily a very serious one. Such is edema of the glottis. With little warning the loose submucous tissues of the larynx become infiltrated with a serous transudate from the congested blood vessels of the inflamed organ. This produces an obstruction, which in turn causes the greatest apprehension to the patient and its family of imminent death from suffocation.

Mackenzie says: "Edematous laryngitis was described with considerable detail by Bichat in 1801, although since he speaks of it as a particular kind of serous swelling which does not occur in any other situation, it is evident that he did not understand its pathological relations."

While edema of the glottis has been known, and supposedly understood, for more than a century, most authors and writers on this subject are apparently still satisfied in accepting its etiology as expounded by the older writers. This includes nearly every agent and condition that could possibly cause an irritation in, or a congestion of, the laryngeal structures.

Among the numerous etiological factors given by the writers of today are injuries, fractures, inhalations of steam, irritating vapors, escharotics, etc.; applications of medicinal agents, as silver nitrate and creosote; swallowing irritating fluids, and certain drugs, as potassium iodide; inflammatory conditions in adjacent structures, as tonsillar and peritonsillar abscesses, enlarged and suppurating lymphatic glands of the neck, foreign bodies in the supraglottic regions of the throat or in the esophagus; violent use of the voice; local diseases of the larynx; tuberculosis, syphilis, abscesses, cancer, neoplasms, etc. To these are added the constitutional causes, viz: Bright's disease, diabetes, valvular disease of the heart, sclerosis of the liver; Ludwig's angina, acute thyroidism, aneurism of the neck and certain of the acute infectious diseases.

Edema of the glottis is a comparatively rare disease, which could hardly be expected to be the case if all the above enumerated conditions

* Read before the Southern Medical Association, Section on Ophthalmology, at Hattiesburg, Miss., November 12-14, 1911.

and maladies, most of which are exceedingly common, are contributory factors in its production.

Owing to the highly vascular structure of the larynx and the almost unsupported blood vessels of its mucous membrane, it is not surprising if in certain diseases of the heart, liver, lungs, and kidneys, in which there is an interference wth the systemic circulation and a damming back of the blood on the venous system we get an infiltration of such lax structures as the submucosa of the epiglottis, ventricular bands and aryteno-epiglottic folds. Indeed we would naturally expect in the course of these diseases an edematous laryngitis to develop much more frequently than it really does, on account of edema being then so often present in other parts of the body. Especially is this true of the anasarca accompanying Bright's, because of the increased permeability of the capillary walls in that disease. Edema of the larynx may then appear as the first manifestation of nephritic edema.

Admitting that edema of the glottis is not infrequently caused by Bright's, is sometimes caused by syphilitic lesions in the larynx, and has possibly been induced at some time by each of the other manifold causes ascribed by the various text-book authors, many cases are still unaccountable. In my opinion, founded upon the few cases I have seen in which all of these causes could be excluded, there is a definite and fundamental predisposing cause in most cases, if not in all, of acute edematous laryngitis. This, I believe, is a neurosis, causing a predisposition to the disease, and where it is present only slight irritation is necessary to precipitate an attack of edema.

Among the few cases of edema of the glottis I have treated I have found three (two acute and one chronic) in which the most careful and persistent search failed to reveal any general or local, predisposing or exciting cause more than the history of a little bronchitis preceding the attack in two cases and slight exposure in the third; therefore, I am constrained to believe that there exists a more potent underlying cause than those so generally accepted. The disease is probably an angioneurosis, closely akin to acute angioneurotic edema, which is defined as a neurosis characterized by transient circumscribed edema developing without obvious cause. I fail to find any substantiation of this theory, or even a suggestion of it, in any of the works on laryngology, but both Osler and Dieulafoy in describing acute angioneurotic edema mention the sudden and dangerous edema of the larynx that may occur in that disease.

Without some underlying cause of this nature how would you explain the usual absence of edema of the larynx in the presence of the numerous and common conditions supposed to be directly responsible for it?

How many cases have you seen accompanying or following injuries of the larynx, fractures, inhalations or applications of irritating substances, drugs ingested, foreign bodies in the larynx and esophagus, or from abuse of the voice?

How many cases have you observed in tonsillar and peritonsillar abscesses or enlarged cervical glands?

In what percentage of the many cases of syphilis and tuberculosis of the larynx you yourself have treated have you encountered either the acute or chronic form of the disease?

Bright's disease, syphilis and tuberculosis are given as the most frequent causes of edema of the glottis, which is probably true; but is it not equally true that it occurs in only a small minority of these cases?

While I am not prepared to elucidate the subject, still it is my desire to get the opinion of this society, founded on the clinical experiences of its individual members. Many of you have undoubtedly seen far more of these cases than I have; do you or do you not usually find a sufficient and satisfactory cause for its occurrence? Have you seen many idiopathic cases, and have you found it absent

in the majority of the conditions where you would naturally expect to find it?

Is it improbable to your minds that there usually exists a fundamental cause of edematous laryngitis in the form of a toxemia, a faulty metabolism, or of a neurosis?

The symptoms of the disease are neither more nor less than would be expected in any condition with a marked reduction in the size of the glottis—stridulous breathing or dyspnoea, hoarseness, feeling of a foreign body in the throat, slight, wheezy cough with little expectoration, flushed face and dysphagia. Spasm of the glottis with its dreaded suffocative symptoms, orthopnea, general cyanosis or even asphyxiation with death in a very short time is said to occur in sixty per cent of all cases.

The high mortality of edema of the glottis is due to the fact that the majority of the cases first fall into the hands of the general practitioner, who, failing to recognize the gravity of the condition, uses dilatory and conservative measures where prompt and radical ones are essential to the salvation of the patient. Or else, living in a remote rural district, he attempts to send the case to a laryngologist and it arrives too late to prevent the fatal issue. If, however, these cases were closely watched and immediately upon the development of asphyxial symptoms a knife of any kind were plunged into the trachea most of these patients would be saved. Since every moment is then very precious this procedure is often justifiable with a total disregard of all the surgical rules for sterilization, asepsis and antisepsis. The constriction being thus relieved, the tracheal incision can then be kept open with sutures of any description until a tracheotomy tube is procured and introduced.

The acute form of the disease usually responds quickly to treatment. Scarification of the edematous parts, or puncture with the laryngeal lancet, should be made at once, followed by such astringent application as suprarenalin, cocaine and alum. The patient must be kept in a warm room with a moist atmosphere, ice cap to the laryngeal regions externally and small pieces of ice constantly sucked and swallowed. Free diaphoresis and catharsis should be promoted, and where the underlying cause can be ascertained it should receive suitable attention. Besides all this the case must be closely watched and everything be in readiness for a rapid tracheotomy or intubation. The former is to be preferred because the opening is made below the inflammatory process.

The treatment differs little in the chronic edema, but the prognosis is bad, for relapses are common; however, the patient's life can be prolonged and he be allowed to make his demise by a more pleasant and less violent route.

Exchange Building.

DISCUSSION.

Dr. E. C. Ellett, Memphis, Tenn.—I have seen more trouble of this sort in children than in grown people. In fact, I don't think I have seen more than three or four cases in grown people. If you do not see any evidence of membrane you are apt to conclude it is not a case of diphtheria, but I think many of these cases even in the absence of membrane are favorably influenced by antitoxin and also by a dose of phenacetin. The latter lowers the fever and lessens the congestion, and some of these children will open up and breathe all right after a dose of phenacetin. I have seen some of them die that were not cases of diphtheria.

I remember one interesting case of a gentleman whom I saw in an attack not so much edema of the glottis as of the epiglottis and ary-epiglottis folds, and it was always a question of whether this was not a case of urticaria of the throat. The question had been raised by many people. He was an army officer, who had been in different sections of the country, and had been seen in similar attacks by different men.

When I was a student we had some lectures once from the late Dr. Siler, who was a very peculiar individual. He lectured on edema of the glottis, and he said: "Gentlemen, the glottis is a hole, and how can you have edema of a hole."

Dr. Homer Dupuy.—The doctor mentioned adrenalin spray in the condition. I wish to lay stress on its vigorous and persistent use. In at least six of my cases of laryngeal edema it has tided over alarming dyspnoea making it unnecessary to practice tracheotomy. But there is something in the technique of the man behind a properly working atomizer. Even in the face of marked gagging the spray must be directed way down towards the vestibule of the larynx. It must be repeated with the same vigor every two or three minutes, lengthening these intervals as improvement becomes manifest. I begin with the 1-1000 solution. When normal breathing is ob-

tained I have continued its use in diminished strength (1-5000) every hour or so for twelve hours to insure ischaemia of the parts. The history is of no value in the presence of threatening asphyxia. Adrenalin may save the situation. Tracheotomy—when we are dealing with adult subjects—is the surgical procedure. In such affections intubation, in my own opinion, is neither advisable nor feasible.

Dr. Bird.—In edema of the glottis the most useful remedy is a suprarenal preparation; my experience is limited to adrenalin chloride, 1-1000. In one case, a lady, I used this agent at my office, and had her continue it as necessary during the night. When I saw her in the morning her throat was normal. In a second case, also a lady, showing a marked swelling of the left false cord, relief was obtained after using the remedy for six hours. In a third, the condition, edema of the epiglotis, was partly relieved, scarification being necessary. Adrenalin was continued, however, until the swelling subsided, which it did within twenty-four hours after treatment was begun.

COMPLICATIONS DURING CATARACT EXTRACTION: REPORT OF CASES.*

By J. T. HERRON, M.D.,
Jackson, Tenn.

This paper is intended not so much for the specialist who has been in practice for many years, and has experienced the ups and downs which are liable to the operator during cataract extractions, but more for the benefit of the young man who is not so liable to keep his head when a complication arises during the extraction of the lens.

I remember very vividly how my heart would beat when even a little vitreous would lose. If it were not for one of the cases which I will report this paper would not have been written.

I have never experienced any trouble with some of the commoner complications which all of us have doubtless had, such as falling of the iris in front of the knife, or wounding of the iris. The cut is made regardless of the iris. Inadequate corneal incision is frequently encountered. The cut can be enlarged with a Stephens tenotomy scissors. Hemorrhage into the anterior chamber either from the iris or conjunctiva may obscure the field of operation and retard the expulsion of the lens.

Patience and a steady head is very essential when such complications arise. Incomplete cystotomy and dislocation of the lens may happen, and generally occurs from an obscure field. The operator should at all times have a clear field. The loss of vitreous is perhaps one of the most frequent and serious complications we have. It is this class of cases which I will report.

CASE NO. I.—G. W., MALE, AGE 74.

He had been blind from cataract in his right eye about two years. His left eye becoming involved he came to me. His physical condition had been good for years. His field of vision seemed to be perfect. I gave him treatment for ten days to prepare him for the operation, after which time he returned. While attempting to remove the lens there was a loss of vitreous. I enlarged the wound, removed the speculum, had my assistant to hold his lids open and I made gentle pressure, without effect. The vitreous still escaped. I introduced the wire loop, and with slight pressure on lower part of cornea with a wide spatula, the lens fell into loop and was removed. There was no collapse; the wound healed. He returned home in twelve days with instructions to stay indoors. He exposed himself and had pain in the ball several days. With atropine and hot applications he got relief. About six weeks after the operation I attempted to fit him with a glass. The best I could give him was 20-70; could not give him reading lens.

I found nice opening in capsule, fundus normal, no trace of any inflammatory condi-

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tion. He claims to have had good vision in this eye before going blind. I have been anxious to know the cause of this bad vision.

CASE NO. 2.—AGE 71.

Came to me in June entirely blind in left eye from cataract. I did similar operation as No. 1, except enlarging the wound. I had about same loss of vitreous. Delivered lens as No. 1. He went home in 14 days. Had no pain after going home. Returned for glasses in six weeks, + 11 D= +3 cyl. × 15 — 20-30. Reads the finest print with + 15 D? + 3 yl×15.

CASE NO. 3.—E. P., MALE, AGE 38.

Came to me in September; could only count fingers with either eye. His vision had been bad all of his life. He could see how to do some farm work until the last few months. His field of vision was bad in left eye. The right eye had a large black lens; tremulous iris; lens dislocated or rather tilted backward at upper part. Owing to small size of cornea I used a No. 2 cataract knife, making a sclero-corneal wound. Just as I made my counter incision a great amount of aqueous and vitreous escaped. The ball partly collapsed before I had completed my incision.

I proceeded as in No. 1 except enlarging the cut. The lens fell back into the vitreous. I had the patient to turn over for a few minutes. When he turned back the lens came forward. I attempted to remove it, when all of the vitreous seemed to pour out. There was a complete collapse.

I opened the lips of the wound and removed the lens with wire loop. Not anticipating such a collapse, I used normal salt solution with a curved eye dropper, injecting it into the ball several times while on the table which was more than an hour. At the end of that time his ball was still collapsed. He was placed in bed and requested to lie on his back as much as possible for twenty-four hours. At the expiration of thirty hours I dressed his eye. I was surprised to find the ball had filled out and wound stuck nicely. There was a hemorrhage in the anterior chamber. His vision was light perception.

At the end of the first week his vision slightly improved, so as to count fingers close to him. I kept him in bed with the bandage on for fourteen days. I did this hoping to avoid a future hemorrhage. Knowing that this collapse was a severe test on the retina and blood vessels I advised him not to attempt to use his eye for several weeks. After fourteen days I let him go to his sister's near my office. Twenty-one days after the operation he called me to the phone and stated he could recognize his relatives across the room and tell the color in the carpet. He insisted that he should take off the bandage, which he had worn since the operation. Contrary to my advice he continued to pull the bandage up every few minutes looking at different objects.

Late that afternoon he had a hemorrhage with great pain, lasting all night. I saw him the next morning. I found the anterior chamber full of blood, vision light perception; great pain in the ball. I used hot applications and atropine, with iodide potassium internally. In a few days his vision began to return. At the end of two weeks I examined his fundus, considerable opacities in the vitreous. I did not give him a careful test for fear of another hemorrhage. With a + 12 D he reads 10-70. I did not attempt to fit him with glasses. I advised him not to attempt to read or use his eye for some time.

He said to me before going home he could see better than he had ever seen, and that he would not give what vision he had for the whole of the Illinois Central Railroad from Jackson to Chicago. He has written since going home that he is still improving.

I did not realize the rarity of these cases. L. Webster Fox, with an international reputation, has only operated on eight.

The point I wish to emphasize is that we should do everything in our power to restore the vision of these unfortunates.

DISCUSSION.

Dr. Savage.—To start the discussion and try to say a little something too, I think Dr. Herron ought to feel like congratulating himself upon the result of that case. I don't know whether I would have thought of the normal salt solution, and have had it ready or not. How came you to have it ready?

Dr. Herron.—I made it—kept him on the table for an hour.

Dr. Savage.—This is a lesson that is worth while for the balance of us, and since we do not know when such enormous loss of vitreous is going to occur, why not make it worth while by having the solution to use when it does occur? The hemorrhage, I don't think, was choroidal at all. I think it was from the iris. But if it had been choroidal hemorrhage, as my friend said a while ago, his eye would have filled and the force from behind would have emptied its contents. It would not have emptied the choroid and the retina. The choroid and the retina are anchored at two places. The vitreous membrane does come out—it is not anchored anywhere, except at the front. But really that case that Dr. Herron reported is remarkable to me. I am ready to believe every word of it, and ready to follow up just such a procedure, if it should occur in my practice.

Now to prevent these things is a great thing, and some of you have been receiving letters, I suppose, from Chicago, in the last few days asking a series of questions that are being sent out from Chicago about cataracts. One of the questions asked: "Is there more danger from escape of vitreous when the patient looks down than when he looks straight ahead, or a little more than straight ahead, or straight up?" I think any of us who has observed, can say readily, that the down look is attended by a great deal more danger than the straight forward look, or the look a little more than straight. Then how foolish it is, in any event, when doing a cataract operation, to grasp the eyeball below. Don't be guilty of it any more if you have been doing it recently, because you are pulling in a direction that, if there is an escape of vitreous, there may be something else escaping. With the pressure from the choroidal vessels there may be choroidal hemorrhage. There is much more danger, after the escape of vitreous, in any given case, than if it has not escaped. Cases will occur when one-half of it will run out. I have had considerable escape of vitreous, but have never injected anything in to take its place. I have seen eyes collapse considerably, and have seen them come out, too, with fairly good results, but whenever it comes to the extreme that Dr. Herron saw it, we ought to do something to try to save that eye. I might have gone on a moment ago in connection with our care not to make the escape of vitreous too great, and emphasized it by saying what is the very best hold we can get on the eye? Grasp the tendon of the internous with the hand resting on the brow and nose, so that there will be no pulling on the eye. This is a simple and steady hold. It is almost in a directly upward looking position, and that is the hold to have on the eye in making the corneal incision, so as to protect it. I want to tell you that you should keep your hold on the eye during iridectomy, for it is much safer for the patient—for the assistant to do the snipping—than for you to turn loose and let the eye wabble about and do all sorts of damage. But, finally, if what Hulen has offered us proves to be the success it promises to, we have got, in connection with those other careful steps that we should always observe—if what he offers proves to be the success it promises to—then, in my judgment, we not only have less risk as to the escape of vitreous, but we have a thousandfold better chance for a better after condition than we have been having, whatever operations may have been done.

I think there is a better day for us in cataract extraction. We should always follow those things which we know favor the least loss of vitreous and do the operation that promises the least risk of loss of vitreous.

Dr. Martin.—Where did that hemorrhage come from—from the iris?

Dr. Herron.—I think from the choroid. When I opened the eye, the wound had healed, and to my surprise the ball was filled out, and blood was in the anterior chamber.

Dr. Martin.—Did that come from the cut in the iris?

Dr. Herron.—I could not say. It was so completely filled that I could not tell whether from the iris or the choroid. But taking that kind of a case, such as he was, a nervous patient, who probably never had had good health, and was extremely nervous, it might have been choroidal trouble, because I am sure, while I could not see the choroid of the other eye, there was choroidal trouble, from the left eye, probably. That is to say, I could not see whether it came from the iris or not, but, if it came from the iris there was no pain following.

This second hemorrhage, I don't know where that came from, but there was intense pain for forty-eight hours—most excruciating pain. I gave one-quarter grain of morphia, or thereabouts, every four hours, for twenty-one days after operation. He had been using his eye for the first time that day, and I warned him over the telephone to keep the bandage on and not to use that eye, but late that afternoon he had the hemorrhage, and they did not call me until the next morning, so I went to see him, and he had the most excruciating pain, and I could not leave him at all for forty-eight hours, with one-quarter of a grain of morphia every four hours, and I gave him some other local sedative in the endeavor to quiet him. I went to the most extreme measure to do so, because he seemed to be suffering such intense pain.

Dr. Feingold.—How about leeches?

Dr. Herron.—We have no leeches, doctor. We could have used artificial leeches.

Dr. Feingold.—That would have relieved his pain considerably.

The Secretary.—I had a case, not a cataract case, but a case in which the eye ball was opened for the extraction of a foreign body, which resulted in the loss of an amount of vitreous and we had difficulty in getting it out, and after that eye was sutured I used a hypodermic syringe and filled that eye with a saline solution. I just passed the needle into the incision through the stitches which held the conjunctiva together, and removed the bandage from the eye, with happy results.

Dr. Feingold.—There are two sides of the question of escape of vitreous that have always been uppermost in my mind. First, we all have observed the fact that the iris can be played upon by eserin or atropine, according to our will, as long as the iris floats in aqueous humor, but that we have lost all power over the iris if there be vitreous humor in the anterior chamber. If, after prolapse of the vitreous, with its accompanying floating of the iris in the wound, we attempt, by the use of eserin, to disentangle the iris, our efforts will have very little effect, owing to the presence of vitreous in the anterior chamber.

The other is the following: The vitreous humor is an excellent medium for bacterial growth. If, after the escape of vitreous, we were sure that no vitreous lies within the lips of the wound, not even in the form of a thread, I would have no fear, but, unfortunately, some slight amount of that vitreous connects always—except in those cases of very liquid vitreous—the conjunctival sac with the interior of the eye, and in this way, a low grade or more violent infection can creep into the interior of the eye.

I must congratulate Dr. Herron that he has utilized the method, which has been recently described, if I am not mistaken, from Elsching's clinic.

The Chairman.—If there is no further discussion, I will ask Dr. Herron to close the discussion.

Dr. Herron.—I wish to thank the members for the interest manifested in this paper, and I assure you that I would not have reported this case, but that I felt that many of this association knew me, and felt also that it could be of benefit to the young men. In all my operations, I have never seen or experienced anything else like that, and, as to the hemorrhage, whether from the iris or from the choroid, I could not tell. It did not come on for twenty-four hours. I was so anxious to see if it had filled out that I dressed it after thirty hours, which was late the next afternoon. The hemorrhage came on after the wound stuck. If it had been choroidal hemorrhage at the time that wound would have been open, there would have been no doubt about the results.

I said to Dr. O'Connor, my assistant, who has ably assisted me in my cataract operations—and I think a good assistant is almost equal to the man himself; "I fear that somebody will doubt this case; you had better come with me." He is a graduate of Tulane, and a post-graduate of some college in New York, and he has had some experience, especially in assisting in these operations, and seeing the different operations, etc. He said to me: "In all my experience I have never seen anything like it." The ball was so flat that I could not remove the lens after the ordinary way. I opened the lips of the wound and scooped out the lens. I kept the patient on the table for two hours. During that time I injected normal salt solution in the ball several times, which doubtless caused it to fill. I laid much stress on the after treatment of this case. I believe if I had not used the constant care and had the complete control of the patient, that he would have lost his eye anyway, but he obeyed me to the letter, except on the twenty-first day, when he began to improve a good deal, and he had a hemorrhage; but since that time he has been very careful. Now he is wearing smoked glasses, and his vision improving. I think his vision will continue to improve, and I hope to get better results than I expected.

Dr. Savage.—Would you have given a copper cent for that eye?

Dr. Herron.—I would not have given a penny.

URIC ACID AND INDICAN BEARINGS ON DISEASES OF EYE, EAR, NOSE AND THROAT.*

By J. M. GUTHRIE, M.D.,
Meridian, Miss.

I am presenting this subject because it is so intimately associated with our work, and on account of its prevalence, so frequently overlooked.

We, as specialists, frequently get into routine of treating symptoms locally only, without considering the constitutional causes or treatment, hoping to cure our patients of a systemic condition by only considering the local manifestations.

Some of the most aggravating conditions that we have to combat are those arising from metabolic changes and auto-intoxication. I shall refer to two which I consider the most important—uric acid diathesis and intoxication manifested by indicanuria.

*Read before the Section on Ophthalmology of the Southern Medical Association, Hattiesburg, Miss., November 12-14, 1911.

In my limited practice I am constantly on guard for evidence of these manifestations which are so common, are often overlooked, so I am going to try to impress their importance upon you. I will therefore consider them separately:

First, and most important, is uric acid diathesis. According to Francis E. Wood, pathologist of St. Luke's Hospital, New York, uric acid is formed in the body by the decomposition of the nucleins of the nuclei in the cells of the food. These nucleins are of very complicated structure and contain a series of bases, which are called, collectively, aloxur, xanthin, or purin bases. The latter name is given because all these bases in uric acid seem to be derived from a hypothetical substance known as purin.

Uric acid can also be derived from nuclei of the leucocytes and an increase in uric acid excretion is observed whenever there is a great destruction of leucocytes, such as in leukemia, in which disease very large amounts of uric acid are excreted.

It must be remembered that uric acid is also eliminated in the feces to a certain extent, so that the whole excretion can not be estimated from urine alone. Under normal conditions uric acid excreted in urine is from 3 to 24 grains in twenty-four hours, and existing in the blood under normal proportions one of uric acid to forty or more urea.

Where is uric acid formed in the body?

Two different views upon the subject have been advanced. First, it is formed in the tissue, especially the liver and spleen, and merely excreted by the kidneys.

Second, that the kidneys not only excrete, but constitute the seat of formation of uric acid. The former view is most generally held and supported by the following facts:

(a) Under normal conditions uric acid is found in traces in the blood.

(b) After extirpation of the kidneys it continues to be formed.

(c) The secretion of uric acid is greatest during the period of digestion; that is, at the time the liver and spleen are most active.

(d) In gout or anaemic conditions where the excretion of uric acid is diminished it accumulates in the blood and tissues. The chief advocate of the second view is Garrod, who bases his conclusion on the fact of the small amount of uric acid in reptiles and also on the fact that he was unable to find a larger quantity of uric acid in the liver and spleen of birds than in those organs of mammals.

I am heartily in favor of the first view, because I have repeatedly observed in patients, where quantitive analysis has shown a diminution in the amount of uric acid excreted, when every symptom that the patient had showed conclusively in my mind that there was an excess of uric acid in the body, and when proper dietetic, hygienic and medical treatment was resorted to the uric acid was excreted in large amounts, double that which we find under normal conditions, followed immediately by the subsiding of symptoms.

Now let us consider what the effects of an excess of uric acid in the blood are. The disorders of the nervous system, aching pains in the limbs, lassitude, pain in the shoulders, hepatic neuralgia, severe cramps in the legs, headache, vertigo and temporary dimness of vision, convulsions, paralysis, noises in the ears, sleeplessness, depression of spirits, irritability of temper and cerebral symptoms.

Haig maintains that the presence of uric acid in excess accounts for the exacerbation of pain in rheumatism and gout, and Lever contends that these diseases are primarily due to the action of this acid on the brain, the spinal cord or solar plexus of nerves. Haig says uric acid in the blood contracts the asterioles and capillaries all over the body, producing the cold surface and extremities, raising tension of pulse and according to Marcy's law that pulse rate varies, inversely as the arterial tension, slowing the heart.

Headache is a local vascular effect of the uric acid. Excretion of the acid may even

explain the mental depression and irritability and their results in the excess of suicides and murders in July and August. There is an excessive secretion of this acid in the warm months and a minus excretion in cold weather. During plus excretion there will be high arterial tension, with anaemia of the brain, bad temper, etc. The uric acid theory makes clear the reasons why some persons suffer from attacks of nervous coryza under certain favorable conditions in winter as well as during warm months.

It also unifies all the various forms of hay fever. They are variations of nervous catarrh. Heredity is probably the chief factor in determining the direction in which the uric acid diathesis will afflict an individual, whether it results in migraine, angina pectoris, asthma, nervous catarrh or some other neurosis; but undoubtedly accidental or acquired conditions may act as directing or localizing agents.

I will mention some of the most frequent diseases of the eye, ear, nose and throat, of which uric acid diathesis is a predisposing cause, without going into details:

First of the nose, acute rhinitis, chronic or nervous catarrh, naso-pharyngeal catarrh.

Of the throat we have, rheumatic, acute and chronic pharyngitis, rheumatic tonsilitis in various forms, acute laryngitis and laryngeal paralysis.

Next the ear, we have, tinnitus aurium, eustachian tubal catarrh, some acute inflammations of the middle ear by extension from nose and throat, obstinate cases of chronic middle ear catarrh, adhesive inflammation of middle ear. The drumhead is often the seat of chalky deposits.

The diseases of the eyes that are sometimes caused by uric acid diathesis are:

Iritis, glaucoma, hemorrhagic retinitis, episcleritis and chalky deposits in conjunctiva.

Excessive amounts of uric acid in the body plays a very important part in the cause of so many conditions of our specialty that we should not fail to be on the lookout for the prevention of same. Preventative treatment of this condition consists in reducing as much as possible those foods that increase the formation of uric acid such as, red meats, sweets, starches, beers and wines. Limit the diet largely to fresh, green vegetables, fruits, milk, eggs, white meats, such as baked fish, baked chicken, game, always remembering that exercise aids in the excretion of uric acid. I insist on these patients taking the proper amount of exercise, direct cold baths every morning, followed by brisk rubs, in patients who are not too weak or debilitated, otherwise, direct warm baths at bed time; these measures will keep the skin active. The patient should dress warmly, avoid rapid alterations in temperature and be careful not to have the skin suddenly chilled. This last precaution applies particularly to those patients who have inherited a tendency towards uric acid diathesis.

Active treatment consists in free use of alkaline mineral waters, one quart of Vichy should be drunk daily, or one of the indifferent mineral waters with the addition of lithia or sodium carbonate each ten to twenty grains daily, free purgation with sodium phosphate one to two drams in hot water in the mornings on arising and the administration of salicylates.

In acute conditions as pharyngitis, tonsilitis, iritis, five to fifteen grain doses of salicylates in peppermint water or lacto-pepsin, every two to four hours. In milder cases five grains aspirin every two hours or, in cases where sodium salicylates are not well borne by the stomach. In acute cases where urgency is requred, a diet of milk or milk and Vichy may be insisted upon until such symptoms pass away, after which, a more liberal diet may be given as outlined under prophylaxis.

I will next call your attention briefly to indicanuria.

Indican in small quantities is a usual constitutent of normal human urine. Under certain conditions, however, the amount is so large as to merit the distinction of indicanuria. Normal urine contains very small quantities

of indican, about 0.0045 to 0.0195 grammes are excreted every twenty-four hours. This substance is formed from indol, which is a product of the putrefaction of albuminous substances in the small intestines. The indol is then absorbed from the small intestines and enters the blood where it becomes oxidized to indoxyl, which immediately combines with potassium and to a slight extent with sodium sulphate to form, indoxyl potassium sulphate, in which form it is eliminated in the urine.

Indicanuria is ordinarily dependent on decomposition of the intestinal contents, consequent upon constipation or occulsion of the intestinal tract, especially the small intestine, while occulsion of the large intestine does not cause it. Indican is found to be increased when albuminous putrefaction takes place in other parts of the body, as in cases of empyema, putrid bronchitis, gangrene of the lungs or advanced phthisis.

There can be no doubt of the clinical significance of the test for indoxyl in the urine, for points of decided importance, not only in diagnosis, but also in prognosis, and treatment can thus be gained. There are many tests for indican, but the ones I use and like, are the ones devised by Ogden and Jaffe-Stokvis, which are as follows:

Ogden's—Take 15 cc. of strong hydrochloric acid c. p., add thirty drops of urine to be tested in wine glass and stir immediately. An amethyst color soon makes its appearance, reaching its greatest intensity in from five to twenty minutes. The amount of color obtained at the point of greatest intensity furnishes some data as to amount of indoxyl present. If normal, a distinct, but not intense, amethyst color appears, if increased, the color is decided and often deep and if diminished, there will be but very little color and rarely an entire absence of color.

Jaffe-Stokvis—Take about 10 cc. of urine in test tube, add an equal volume of hydrochloric acid and a few drops of freshly prepared saturated solution of sodium hypochlorite or common saltpeter and then add 1 or 2 cc. of chloroform. The mixture is thoroughly agitated and set aside. The indigo that has been set free is taken up by the chloroform, coloring this to a greater or less extent, the degree of increase as compared with the normal, being determined by the intensity of color. Albumin does not interfere with these two tests. Bile pigment which interferes with the reaction may be removed by the addition of a solution of basic acetate of lead. It potassium iodide be present the chloroform will be colored more or less a carmine, or bright red color will be produced.

The diagnostic value of an increased excretion of indican is chiefly in connection with the diagnosis and treatment of the milder forms of gastro-intestinal disturbance, which are functional rather than organic, which make themselves known by the symptoms classed together under the expression of biliousness. It is this form of indicanuria that we have to treat, the other forms are treated by the general practitioner.

This class of patients present themselves for treatment presenting the following well known symptoms:

Lassitude, headache, hoarseness, recurrent sore throat, tinnitus aurim, dysopia, dimness of vision, indigestion, constipation, diarrhoea, etc. They will tell you they have headache caused from their eyes, or they see specks in front of them, their vision is dim.

I recall to mind a young man, aged twenty-two years, bookkeeper, who presented himself to be refracted, stating his vision had become suddenly bad, that he was unable to work on his books. He gave the following history:

Had been feeling badly for several days, had frontal headaches, dizziness, thought he had catarrh, suffered with indigestion, was usually constipated, sometimes had diarrhoea, was a good eater, ate lots of meats, sweets, etc. His distant vision was 20-50; near vision was D-150. No lens improved his vision. After examining his eyes and obtaining the

symptoms I decided it was not a case for refraction, but was toxic ambliopia or indicanuria. I put him on eliminative treatment, free purgation with calomel, followed by Epsom salts, directed his diet and in a few days his vision was 20-15 and he could read the finest print on the test card without any trouble.

We have another class who come to us that have refractive errors, that are sufferers with indicanuria. They tell us that their glasses do not suit them; they were all right for a while, but they have headaches and present all the symptoms of indicanuria, and insist on you changing their glasses. After examining them carefully you find that they have been properly refracted and it is then up to us to eliminate the patient and clear up the symptoms.

Again we have patients with recurrent sore throats. The mucous membrane of the throat presents a dull red appearance, with perhaps ulcerated areas on tonsils, tongue, gums, etc. Also cases of nasal catarrh, as they term it. They are continually hawking and spitting and are very much worried about their condition. They will tell you that they have been treated by a good many specialists, had their nose cauterized and got better for a while. On examination, the mucous membrane in nose is red, inferior turbinates, swollen, some have hydrorrhea, attacks of sneezing, asthmatic symptoms, etc. As a rule they eat too much meat, have a gastro-intestinal disturbance.

There are a great many other conditions met with in eye, ear, nose and throat practice, that are traceable to indicanuria, that I will not mention.

The treatment of indicanuria can be stated in a few words; elimination with free purgation of calomel and salts, followed by such intestinal antiseptics as salol, together with the proper diet, will ofttimes cure our patients readily of the very distressing symptoms of which they complain.

The local treatment of course should not be omitted, cleansing alkaline lotions and sprays should be used together with other local measures as are indicated.

In conclusion let me emphasize that elimination is the mainstay in the treatment of uric acid diathesis and indicanuria.

SUPRA-CONDYLOID FRACTURES OF HUMERUS.*

By ISIDORE COHN, M.D.,
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Certainly the majority of the profession are not yet ready to adopt the dictum of Lane in regard to fractures. "Operate in every case." Dr. Richard Harte opposed the above dictum at the American Surgical Association (1911) and advocated a more thorough routine treatment of fractures in general by men of experience rather than relegating the management of these cases to their assistants. His main objections were based on the increased mortality following a routine operative treatment, the necessity of special instruments, the increased danger of wound infection, and last, but not least, the difficulty of some of these operations.

Well-equipped hospitals are not to be found in every place, and unless the work of converting simple fractures into compound fractures is done with the most rigid attention to the details of asepsis, it is attended with many dangers. This is so well appreciated by Mr. Lane that he advises the most scrupulous care

*Read before the Section on Surgery of the Southern Medical Association, Hattiesburg, Miss., November 12-14, 1911.

in the use of instruments, so that little traumatism may be done, and the hands touch the wound as little as possible.

Bartlett and Hewitt have recently further emphasized the danger of infection by a series of experiments. They introduced screws into animal bones, in some instances using infected screws and in other cases aseptic screws, and after variable periods of time they measured the amount of force necessary to remove them. In every instance the conclusions were the same. When the wound and screw hole were infected, it required less force to extract the screw than when the wound had been made with aseptic technic. They say in part, "An average pull of 95 4-5 pounds is required to dislodge clean No. 3⅜-inch screws from dog bones with average cortex of 2 m.m. after they have been in place from one to seventy-one days. On the other hand, 41 7-9 pounds wil laccomplish the same thing with infected screws."

This is not intended as a plea against operation in selected cases where other methods fail, but in view of the facts that indiscriminate operative management is attended by a higher majority even in the best hands, (Bartlett records a death rate of over three per cent); that operation in some cases is exceedingly difficult, and that there is increased danger of infection, and consequent easy dislodgement of screws, make it worth our while to obtain a better knowledge of the underlying mechanical principles involved in the proper reduction of deformities after fractures.

Deformity following fractures may usually be attributed to, (1) the fracturing force, (2) muscular action, and (3) to gravity.

Many of us without considering the resultant of muscular action, in the case of the fracture in question, still make use of extension, and failing to obtain a proper apposition of the fragments by this method are willing to try operative means to secure the desired result. There are certain cases which on account of extreme youth, age or disease preclude such a measure with a reasonable degree of safety. Especially are children undesirable subjects for such measures on account of the danger of interfering with the nutrition of the epiphyses.

Ashhurst has added greatly to our knowledge of this fracture, and we will do well to heed many suggestions made by him.

Supra-condyloid fractures are more common in childhood; in Ashhurst's series of twenty-one cases all of the patients were under eleven years of age. There are two distinct types of fractures, the so-called "flexion" and the "extension" fractures, the later being by far the more frequent.

The cause of fracture is usually a fall on the outstretched palm, the resultant fracture being obliquely upward from before backward, the lower fragment being displaced backward. This is the co-called "extension" variety. The mechanism of this fracture has been well explained by Ashhurst as follows: In falls on the outstretched hand the force is transmitted chiefly to the radius, as the ulna does not articulate with the carpal bones. From the radius the force is transmitted directly to the external condyle. The force of the blow is transmitted to the ulna through the interosseous ligament and in turn to the internal condyle."

He also insists, that besides the force expended as above stated, the anterior and lateral ligaments tear off the lower extremity of the humerus when hyper-extension follows a fall on the outstretched hand.

The deformity in this instance is not to be attributed solely to the fracturing force and the ligament action, as the triceps pulls the olecranon upward and backward and in doing so draws the lower fragment in the same direction the biceps and the brachialis anticus draw the lower fragments upward; the muscles attached to the internal condyle, which extend down the forearm tend to keep the lower fragment flexed on the forearm. The re-

sulting deformity resembles a backward dislocation of the elbow.

The "flexion" type of fracture is very rare, and is generally found only in adults. The fracturing force is usually applied directly to the elbow from behind. The deformity is not as marked as in the preceding fracture, as the line of fracture is obliquely downward from before backward; instead of a backward displacement of the lower fragment, there is forward displacement. This is due in part to the fracturing force, the combined actions of the triceps and biceps, the action of the muscles attached to the internal condyle and the fact that the lower end of the proximal fragment is lower than the lower end of the distal fragment.

Treatment—The problems to be met in the treatment of this fracture are the reduction of the deformity, by bringing the lower fragment in the axis of the shaft, and to maintain that reduction.

In order to relieve the impaction, which sometimes exists, and to overcome the action of the triceps and biceps, the first steps should be hyperextension and traction. "Hyperextension momentarily increases the deformity by rotating the lower fragment on its transverse axis, as a result of the action of the muscles attached to the epitrochlea and epicondyle (Ashhurst). This is overcome by extension and counterextension on the forearm and arm while the surgeon acutely flexes the forearm on the arm. "Hyper-flexion" is the position of greatest stability according to Ashhurst, because the lever action of the forearm is overcome and because the triceps acts as a natural splint to the humerus in that position. The dressing is very simple, one or two turns of adhesive plaster may be used if accompanied by a sling around the wrist and neck, others make use of a small pad of cotton in the flexure of the elbow and a roller bandage, which encloses the forearm and arm very much as you would a conical stump. Ashhurst advises that we cover the hand, because of a secondary swelling which may arise from the hand being unsupported if not bandaged. Many make the mistake of using a Velpeau bandage or the second roller or Desault. The use of these is not to be recommended because free access to the axilla is impossible, and because the shoulder is unnecessarily immobilized; further it is a known fact that abduction and adduction of the fixed elbow do not disturb the position of the fragments.

Conclusions—A comparison of the results obtained by hyper-flexion and other methods will undoubtedly convince one of the superiority of this method of treatment. Ashurst reports ninety-four per cent perfect results. Coenen twenty-five per cent perfect results (obtuse angle) and Cotton reports eighteen and five-tenths per cent perfect results (right angle splint).

(2) Extension should never be employed, (a) as it favors the lever action of the muscles of the forearm and a consequent flexion of the distal fragment on the forearm; (b) should ankylosis occur the forearm will be in the least useful position; (c) gunstock deformity is more frequently a result from this method than from other methods named and because the action of the biceps and triceps is difficult to overcome by the use of anterior and posterior splints.

(3) Since hyper-flexion is the position of greatest stability it is the position most favorable to good results.

Case Report—A. C., age five, white, male. Family history and previous personal history have no bearing on present injury.

Present Illness—While playing he fell on the outstretched hand. He was immediately seen by an uncle, who is a physician. The doctor put on a temporary anterior and posterior extension splint, believing the fracture was probably a fracture of the olecranon, and as soon as he could bring the child to the infimary for a radiograph he did so. While

there he asked me to examine the child. The radiograph showed a typical supra-condyloid fracture of the extension type.

The arm was then put up in hyper-flexion, adhesive strips were used and this followed by a roller bandage encircling the forearm and arm. As an extra precaution, as I then thought, I applied a roller to the arm and chest in order to immobilize the arm. After five weeks the child was permitted to use the elbow rather freely, passive motion having been used in the mean time. There was neither deformity, nor limitation of motion about the elbow.

He has recently had another fracture near the same joint or I should have a picture to show the lack of deformity. The accompanying skiagraph hardly shows the line of the old fracture or deformity at the seat of it. The result, according to the standards set by Ashhurst were perfect.

A. C., age six years, residence 1059 Washington Avenue. Accident occurred Wednesday, October 11, arm set at angle forty-five degrees for about ten days, after set in angle of fifteen degrees arm taken down and passive motion used, then arm set in a straight splint. Results almost perfect functioning. X-ray shows seat of fracture.

DISCUSSION.

Dr. Parham, of New Orleans.—I arise rather as an advocate for the extended position in the treatment of these fractures, but I think it is necessary to say, in order to explain, while there might be a difference of opinion between surgeons who may get equally good results by hyper-flexion and hyper-extension that we ought not to lose sight of the fact that those fractures should always be treated under an anaesthetic, and with the assistance of the X-ray. If we do that, I think we will have better results in our treatment. If we know exactly whether we have the fracture reduced, when we put on the apparatus, then, after we put on the apparatus, all we have to do is to maintain the fracture in that position by our apparatus, using the X-ray to determine whether we have actually got the fracture reduced. It does not make any difference what position you put it in, really, if you have got it reduced, and you must see that it is maintained in that position. I believe, however, that it is easier, as Allis showed many years ago, to maintain a reduction which you have accomplished by manipulation under anaesthetic in the hyper-extended position, than in a flexed position. Allis showed many years ago, in speaking of fractures about the elbow, that it was almost impossible to prevent some movement of the fragments in the flexed position. If you put on the apparatus in such a position in the extended position, I think you are better able to control the action of the muscles. You can utilize both the anterior and posterior muscles as splints, so that once you have the fracture reduced you can maintain it better in that position, in my opinion. And besides, what is so difficult to prevent—you can prevent the loss of the carrying function. In many of these fractures the carrying function is more or less completely lost, and this, I blieve, may be much better cared for in the extended position than in flexion.

Dr. Cohn.—How about ankylosis, should it occur in the bended position?

Dr. Parham.—That is unfortunate. I believe it is easier to restore the flexed position with the arm stiff in extended position than to restore extension with the arm in the flexed position. Of course, I do not deny that ankylosis in extension would be a greater disability than in flexion, but I believe the surgeon better enabled to prevent ankylosis by treating the fracture in extension.

Dr. Roberts, in the Pennsylvania Hospital, many years ago showed me a plan of treatment which he carried out in elbow fractures, including supra-condyloid fracture, where he put the arm at an angle of 135 to 150 degrees. The splint was arranged also with a lateral angle corresponding with the salient internal angle. This lateral angle was intended to guard against the loss of the carrying function. By the usual methods of treatment, the angle in many of these cases Dr. Allis showed by diagrams, instead of being salient inwards was lost entirely or even salient outwards. It was important to preserve this carrying function.

I believe the important thing for us to bear in mind is this: Not to stick to any one position, except with the assurance of X-ray examination, and the use of a surgical anaesthetic, especially in children, and to see that reduction is effected before the arm ie put into any position at all for permanent treatment.

Now, so far as the use of the open operation is concerned, I think that most of us now are disposed to believe that we are not justified in opening a limb to set a fracture, if we feel reasonably sure that we can set that fracture properly and maintain it without doing it.

However, there are, as Dr. Martin has suggested, certain fractures where you have such difficulty in reducing or maintaining the adjustment that one must resort to some internal fixation. Now, I do not hesitate in such an instance to put on a plate. I have used for some time an ordinary aluminum plate which I could myself cut practically at the operating table with scissors. I have been recently using the Lane plate. I have had occasionally to take the plates out, owing to some infection. The wounds then healed well and the results were good.

So, I am an advocate, especially in cases such as Dr. Cohn has mentioned, where you are not otherwise sure of preventing deformity, which is apt to occur in certain cases, of getting down and seeing that those fragments are put in proper position and

held there. After this, any sort of a splint will do that will maintain the arm at rest.

Dr. Cohn—In regard to using operative means, he limited himself to any age and did not say whether it was intended for children or not. I want to ask if he included children in the classification—children under the age of eleven or twelve in the classification that he was operating on.

Dr. Parham.—Yes, I would include them—I would treat children's as I would other fractures, except that you would not have to resort so often to the open treatment.

Dr. Martin.—If I can possibly do so, I will illustrate it, and you can see at once that Dr. Cohn's treatment is correct. (Dr. Martin draws a figure on board). Now, here is about the fracture (indicating) a little high, it is true, but we have first to understand the mechanism of this fracture, caused by falling on the wrist of the hand. Necessarily the force is exerted at this point. We have here flexible muscles attached at the condyle, and it is going to give way at the weakest point—you see at once what occurs at the time.

Now, the only way to reduce this is to force it back, and there is but one way of forcing it back logically, and that is by extension, because the more you extend, the more you pull on this point. Extending has a tendency to force it down, and it is impossible to get a supra-condyloid to stand, but by flexing, you can get it down in this position, and it presses back into the band and the band holds it in position. So we see the danger of extension. The danger of extension is simply in fractures of this kind, to aggravate the condition that exists, and the tendency is to irritate the biceps muscles, and triceps, which will always occur in these conditions.

If you can once reduce this fracture this way down, you see that it will stay in position after being replaced. There is one danger you must not forget, and that is, when setting it in that way we may sometimes have it united but little laterally, and if the arm is extended, it will be extended out one side or the other. That is one danger, but that is the least to fear.

If, however, we are dealing with fracture of the condyle or fracture of one side—one or the other—then my attention is always given to extending the arm first, and get your fracture in place, and by making observation, get the arm as it should be. By holding it straight for a week or so, and then reducing it, before putting it at right angles, you will get it well without deformity. If this fragment happens to slip up, as it sometimes does, when the arm is straightened in the other method, you see what the trouble is. This treatment applies only to condyle fractures—when you get at this point down there (indicating), because you have the triceps on one side and the biceps on the other being constantly irritated, and you cannot dress it, and if you do, you cannot hold it in position.

I do not advocate it on every case, but I have had enough of this work to discuss it intelligently. I have never treated it successfully without holding it in place by staples. This treatment suggested by Dr. Cohn is, to my mind, the simplest and best that we are using, by which it can be held in position, and it generally can.

Dr. Scott.—I have seen very few of these cases, but the cases I have seen have been the old results, and most have been flexed generally. I have been using on these cases a little rubber band; it has a certain tension that is bound to overcome muscular action. You can almost get the arm to a straight position in a few hours under the rubber band; it will go back up. I have repeated that twice a day. When it comes to the question of passive motion, to get a child to do this with one arm is difficult; but if you put both arms on the table and get them to do it together, the child will do it much better.

The Chairman.—This is a very interesting subject, but we have a good many papers which we want to take up this afternoon, and for that reason I will ask Dr. Cohn to close.

Dr. Cohn, of New Orleans.—I am going to apologize to Dr. Martin, but I wish to call attention to the fact that he has drawn, not intentionally, of course, but just to illustrate a point—he has drawn the line of fracture of the flexion type, rather than of the extension type. Now, if we have an arrow to represent the attachment of the triceps about the olecranon process, and put the arm in extension and allow the lever motion of the muscles in the forearm to be brought into play, when the triceps draw backward and upward, the deformity is increased. In other words, the lower fragment is brought more nearly into the elbow than before. If it is acutely flexed, the triceps acts as a natural splint, and with the increased lever action of flexor muscles of the forearm in that position, we get a position of the greatest stability.

Cotton records his best results from the right angle treatment, in which he got 18.5 per cent; with the obtuse angle, something like 25 per cent. Dr. Ashhurst got .94½ per cent of perfect cures—perfect extension and flexion, and that is a very good argument for that method of treatment.

Another good reason why I do not believe that extension is as good as hyper-flexion is that it is not even mentioned in the collection of cases by Ashhurst.

I don't want Dr. Campbell to misunderstand me when I state that after five weeks that child had perfect flexion; he had not been kept in one position, but passive motion had been instituted in the meantime.

Changes of position, I believe, is advocated. In other words, it is not advocated to keep the arm in one postion all this time. Don't have a complete sling, but a little sling around the neck and wrist.

Dr. Martin, if you will permit a digression, in regard to fracture of the shaft, I believe we will get fairly good results if we use the triangle in the axilla extending down to the condyle instead of using the external and internal right angle splint.*

*No illustrations for the foregoing article have reached the Journal office.

THE ETIOLOGY AND PATHOLOGY OF ANTERIOR POLIOMYELITIS.

By E. M. MASON, M.D.,
Birmingham, Ala.

Although acute anterior poliomyelitis existed more than 5,000 years ago, and, as a symptom complex has been known for more than a century, our real knowledge of the disease may be said to date from the outbreaks of 1905 (when there was an epidemic of 1,500 cases in Norway and Sweden) and 1907 (2,500 cases in New York). These epidemics led to scientific study of the malady, and the discovery of its specific nature and mode of transmission.

Previous to that time it was generally believed that the disease was due to an acute inflammation of the gray matter of the anterior portion of the spinal cord, probably toxic in origin.

Recent editions of such standard works as Holt and Starr still offer that definition of poliomyelitis. In the light of recent research, however, we can picture the disease definitely as an acute, specific infection producing characteristic lesions throughout the entire central nervous system.

This new conception of poliomyelitis was ushered in by the discovery of Landsteiner and Popper, who, in the summer of 1909, found that monkeys could be successfully inoculated with spinal cord from a case of poliomyelitis. Later, in September of the same year, Flexner and Lewis confirmed this observation, and began a brilliant series of experiments which, with the work of Landsteiner and Levaditi, Krause & Meinicke, Romer & Joseph, and others, definitely established the etiology, pathology and mode of transmission of the infection.

Virus.—The virus of poliomyelitis occurs most abundantly in the central nervous system, but has also been found in certain lymphatic glands, and in the naso-pharyngeal mucosa. It is ultra-microscopic, and passes through the finest procelain filters. That it is a definite organism, and not a toxin, is proved by the work of Flexner, who has transmitted it through a series of more than twenty-five monkeys, in some instances using only 1-1000 c. c. of virus for an inoculation. As yet, the organism has not been successfully cultivated on artificial media. It is quite resistant to freezing, drying, and the action of glycerine, but is easily killed by a temperature of 50 deg. cent. for 30 min., and by weak disinfectants such as 1-500 potassium permanganate, 1 per cent hydrogen dioxide, and menthol.

Modes of Infection.—Although intra-cerebral inoculation is the most successful mode of infection in monkeys, it is by no means the only method by which the disease may be transmitted.

The virus may also be successfully introduced via the peritoneal cavity, the blood stream, subcutaneously, through the spinal canal and by way of the large nerves and the stomach. Most important of all, the naso-pharyngeal mucosa very readily takes up the virus. When this mucous membrane is lightly scarified, and a small quantity of virus is rubbed into the wound, infection results in nearly all cases. This fact is very important in relation to the probable mode of infection in man. That the naso-pharyngeal mucosa is the most probable gateway of entrance, as well as exit, of the virus, is further borne out by the fact that it, in infected monkeys, harbors the virus in sufficient quantity to transmit the disease for several months after the acute stage has passed, and long after the brain and cord cease to be infective.

Another important observation of Flexner's which may be mentioned in this connection is that flies may harbor the virus in an active form for at least forty-eight hours. Recent investigations have shown that the dust from

rooms occupied by patients suffering from this disease is also infective.

The question of contagion, in the usual sense of the word, is not settled. In monkeys, at least, it seems not to occur very readily. Healthy monkeys have been kept in cages with others in various stages of the disease, yet no infection has been reported.

Immunity.—In both man and monkey one attack of poliomyelitis, even the abortive, protects against subsequent infection. The immunity thus established is due to immune bodies which exist for a short time, and in small amounts in the cerebro-spinal fluid, but are found in greater abundance, and for a much longer time in the blood serum. Attempts to establish an active immunity by injections of full strength or attenuated virus have met with only partial success, but it has been shown that serum from a recovered case will destroy the virus *in vitro;* furthermore, injections of immune serum have prevented infection in some inoculated animals, and very considerably increased the incubation period in others.

Owing to the fact that monkeys alone among the lower animals are susceptible to the disease, up to this time all efforts to develop a therapeutic immune serum have proved unsuccessful, though practically all of the domestic animals have been tested.

Flexner has found that sheep serum has a slight neutralizing effect on the virus, and at present he is endeavoring to augment this property by injections of virulent brain and cord emulsions in the hope of developing a therapeutic serum.

Pathology.—Flexner has shown that the nature and distribution of the lesions are readily explained by the pathogenesis of the infection.

The virus becomes implanted on the leptomeninges throughout the central nervous system, but especially in the region of the spinal cord and medulla, where it sets up cellular infiltrative changes that are most marked in the perivascular lymph spaces of the arteries entering the nervous tissues.

The vascular lesions constitute the primary causes of the location and lesions in the nervous tissues, the severity of which is determined by the particular vessels affected and the intensity of the involvement.

"The infiltration is in the adventitial layer, though changes must also occur in the intima, and narrowing of the lumina of the vessels is caused by the oedema and cellular infiltration. The vascular infiltration is continuous with that of the pia-arachnoid."

Since the primary changes are vascular, the severity and location of lesions in brain and cord is determined by the blood supply. The lumbar and cervical enlargements, having rich blood supply, are subject to severe lesions. The anterior gray matter of the cord receiving a richer blood supply than the posterior, shows vastly greater degenerative changes.

Variations in the branching of the central artery explain the variations observed in involvement of the lateral halves of the body.

The brain commonly shows less involvement than the cord, but similar lesions may occur in any part of the brain. Paralysis of the cranial nerves, especially the seventh, are not uncommon, and spastic paralysis has been observed. Anderson has recently proved experimentally that a recovered case of spastic, or upper nuerone, paralysis was due to anterior poliomyelitis.

Transitory paralyses may be explained as the effects of temporary vascular impediments, whether from pressure anemia, slight degeneration, hemorrhage or edema, all of which may undergo resolution.

The permanent paralyses depend on necrotic degeneration of the motor cells; hence the reaction of degeneration, the flaccid paralysis and the wasting which occur in the affected limbs.

Blood.—There is a diminution in the total

leucocyte count, with a relative lymphocytosis.

The *cerebro-spinal* fluid shows very important changes, but only in the pre-paralytic stage of the disease.

There is, in this stage, moderate increase of pressure, slight turbidity of the fluid, an increase in protein content, and increased cell content, chiefly lymphocytic.

After the development of paralysis the only change shown, from the normal, by the fluid is a slight lymphocytic cellular increase.

In conclusion, it is a pleasure to give full credit to Dr. Flexner, on whose work and writings this paper is largely based.

REMARKS ON THE DIAGNOSIS OF POLIOMYELITIS.

By W. G. SOMERVILLE, M.D.,
Memphis, Tenn.

Dr. Mason, in referring to the pathology of poliomyelitis mentioned the different types of the disease. In some epidemics of anterior poliomyelitis we have the cerebral type of the disease. We may have encephalo-poliomyelitis in which we have chiefly cerebral symptoms, such as coma. Coma may last for several days, and the patient may die, or recover, with infantile paralysis. It is in this type, where the upper neuron is affected, that we get the spastic type of the paralysis. It is evidently in the spinal type, where the cells of the anterior horns are affected, that the paralysis takes the form of a flaccid paralysis, and it is only in the cerebral type that we get the spastic type. Most cases cannot be diagnosed until the paralysis comes on unless we are having epidemics of the disease. A child has fever, convulsions, vomiting, and it is only when the paralysis comes on we are able to make the diagnosis unless we are looking for the disease. But it is possible in the early stages to make a diagnosis; that is, before the paralysis comes on, as Flexner has found by examining the cerebro-spinal fluid. We may get fluid which is clear, or it may be turbid. But when the fluid is centrifugalized we find lymphocytes and some polynuclears, and a reaction to butyric acid and a response to the Noguchi test. That is one of the means we have of making an early diagnosis of anterior poliomyelitis. The paralysis is generally a flaccid paralysis, with atrophy, and we get by electrical examination loss of faradic excitability; but there are cases in which the muscles are paralyzed, but the reaction of the faradic current is responsive, and we can predict that those muscles will recover, which react even slightly to the faradic current.

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REPORT OF A CASE OF INFANTILE PARALYSIS WITH UNUSUAL FEATURES.*

By WILLIAM G. SOMERVILLE, A.B., M.D.,
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The diagnosis of Poliomyelitis Anterior Acuta is not usually difficult when we see a case after the paralysis has manifested itself; but cases occasionally arise in which the paralysis is so widespread as to leave us in doubt whether we are dealing with toxic polyneuritis, diffuse myelitis, or Landry's paralysis.

The case under discussion is that of a colored boy aged eight years, admitted to the Memphis City Hospital on Sept. 30, 1911, with the following brief history. There was no mention of any previous illness, and on September 27, 1911, his present disease began with fever, lasting two days. During this stage he was restless, complained of pain in feet, and vomited once. There was a tendency to delirium, but not pronounced. Two days after the onset of the fever, on the morning of September 29, his mother noticed that both legs and both arms were paralyzed, but she could not say whether there was any paralysis of the face. He was first seen by me on October 2, on the fifth day of his disease and the third day of his paralysis, when an examination was made with the following results: Heart, lungs, and urine normal; temperature ninety-nine; pulse ninety, and during the first week ranging from eighty-eight to one hundred an thirty; respiration twenty to twenty-four. There was no delirium; he answered questions intelligently, but there was some tendency to somnolence, seemed to have a good deal of pain, and presented the appearance of a very sick patient. This condition continued about a week. There were no convulsions, either local or general, no tremor, but some rigidity and pain of muscles of back and neck. Kernig's sign was absent, although he complained of severe pain in the joints of arms and legs when these members were manipulated. Smell, taste, hearing and vision were normal. There was no paralysis of the external ocular muscles, and both pupils reacted to light and by accommodation; no squint, no ptosis, no strabismus, no diplopia, and no nystagmus were present. The sensory and motor branches of the fifth nerves were not involved. There was motor paralysis of both sides of the face, right complete, left nearly so, and manifested by inability to close eyes, to whistle, to frown, to laugh, or to show teeth. Hearing was normal both in right and left ears, and air conduction greater than bone conduction. There seemed to be a slight difficulty in swallowing for a few days after admission, but fluids did not pass through nose, and there was no loss of voice, and no paralysis of the soft palate. There was complete paralysis of the right and left eleventh, or spinal accessory nerves, as evidenced by inability to rotate or to raise head. The tongue could be protruded straight, but could not be thrust in either cheek. There was complete motor paralysis of both upper extremities and both lower extremities. Patient could not make the slightest motion with muscles of hand, forearm or arm, right or left. No movement made with muscles of right shoulder, but with left arm placed over head could feebly rotate it sufficiently to drop by side. There was complete loss of power of all the muscles of the feet, legs and thighs, both right and left, but gluteal muscles were not completely paralyzed. The muscles of the back and abdomen were in part paralyzed, though the abdominals less so, and there was no paralysis of the diaphragm.

There was no loss nor diminution of the

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senses of touch, pain, temperature or position, at any point on extremities or trunk. Patient could detect a light touch with a bit of cotton on the toes and finger tips as well as on every part of the skin surface. There was no tingling, no numbness; but as before mentioned there was great pain in the joints when the limbs were moved. All tendon reflexes were absent, both right and left. With the plantars there was neither flexor nor extensor response; and the abdominal reflexes were obtained on both sides. There was perfect control over bladder and rectum; no trophic disturbances, and the extremities were not cold.

The cerebro-spinal fluid obtained on the fifth day of the disease was clear, and contained no tubercle bacilli, no meningococci. The electrical reaction tested on October 24, showed an entire absence of faradic response, except slightly in extensors of thighs, gluteals, abdominals, and left face.

We have then a case, a boy eight years of age, who, without previous illness and following two days of fever, developed a sudden motor paralysis of all four extremities, some of the muscles of trunk, both sides of face and both right and left eleventh and in part both twelfth cranial nerves; without any sensory disturbance, without any sphincter involvement; with loss of all tendon reflexes, and loss of faradic contractility.

There were several diseases which we might consider in making a diagnosis. In Landry's paralysis we have slight, if any constitutional symptoms and no pain, the paralysis beginning as a rule in feet and rapidly ascending, usually fatal in a few days with bulbar symptoms.

Corresponding with infantile paralysis, there is no disturbance of sensation, but on the other hand, if the patient survives, there are no electrical changes.

In spinal meningitis we have anaesthesias, rigidity, and increased tendon reflexes. With acute ascending myelitis we have decided loss of sensation along with motor paralysis, trophic and bladder symptoms, and usually no affection of the cranial nerves.

The disease, however, which presents the greatest similarity to the type under discussion, is acute toxic polyneuritis, which, according to T. Farquhar Buzzard, may occur without sensory disturbance, and often with double facial paralysis along with the paralysis of the extremities. But in toxic polyneuritis we can usually get a history of infectious disease, or metallic poisoning; the paralysis usually more gradual in onset without constitutional symptoms, and beginning with tingling and numbness. As a rule there is great tenderness over the nerve trunk and in the muscles.

A few words as to the subsequent history of this case: Four weeks after its onset, there was a partial return of voluntary motion in both sides of face, left greater than right, and ability to close both eyes. There was slight power of motion in upper arms, but none in forearms, hands, or lower extremities. Considerable atrophy was noticed in all extremities. On November 5, about six weeks after the beginning, there was slight power of flexion of the thighs, and great improvement in the facial paralysis. Most authors state that the facial paralysis recovers completely, an important point in making a prognosis.

It is safe to state there will be a gradual recovery of groups of muscles in the extremities, with a more or less permanent paralysis of parts of all the extremities, confined more especially to the lower arms and lower legs, though it is possible that the paralysis may clear up more fully than we can at present forecast.

SYMPTOMS OF INFANTILE PARALYSIS.*

By J. E. SEAY, M.D.,
Birmingham, Ala.

In reviewing the literature, and from my own observations, in a recent epidemic of Infantile Paralysis, there seems to be but few, if any, constant symptoms of this disease.

The following prominent symptoms are given and discussed in the order of their importance and constancy: First, fever; second, paralysis; third, pain and tenderness; fourth, irritability; fifth, nausea and vomiting with a digestive disturbance; sixth, retraction of the head and back; seventh; nervous twitchings and sometimes convulsions; eight, stupor and other symptoms.

The temperature is seldom very high, hardly ever going over 102 degrees F. In rare cases we have hypopyrexia.

The paralysis may be of a haemoplegic, monoplegic or complete. Cases have been reported of crossed paralysis, involving one upper and the opposite lower extremity. Other cases show a progressive type, generally ascending. The ordinary type usually shows a paralysis of one or more extremity, commonly the legs. Very often, only a group or even a single muscle shows a paralysis. The paralysis usually reaches its height in a few hours or days, remaining about the same for four to eight weeks, then shows gradual improvement for six months, often leaving a permanent paralysis in groups of muscles, or one or more limbs. Other cases of a milder nature recover and the paralysis disappears in from five to six weeks. Some cases recover partially, one group of muscles becoming normal and other groups remaining paralyzed, thereby causing deformities. In this way are produced Talipes-Calcaneus, Talipes-Equinus, Talipes-Equino-Varus and other deformities. Cases of flail-joint sometimes result from weakening of ligaments. This condition may be brought about in the hip, shoulder, ankle, knee or wrist.

The next most common symptom is pain and tenderness, the disease affecting the motor, and not the sensory nerves. The pain and tenderness is usually in that area of the body which later shows a paralysis. The pain is often in the back of the head and neck, and is sometimes distributed over all the extremities, but most often is in the lumbar region, or some other portions of the spine. Often one mistakes this condition for rheumatism or scurvy on account of the pain and tenderness elicited in handling the child. The pain and tenderness is probably due to an associated neuritis.

The nervous irritability is not different from that of other acute, infectious diseases. The child wants to be left alone and often cries out when it is disturbed.

A large percentage of the cases of infantile paralysis have digestive disturbances. The bowels are often loose, but may have constipation. The vomiting occurs whether or not the digestive disturbance is present. The vomiting resembles that of the cerebral type.

In some cases we have retraction of the head and neck. The opisthotonus causes one to think the case one of meningitis. The Kernig's sign is usually absent, but is sometimes present. As a rule there is a flaccid condition of the muscles instead of a spasticity. Some cases seem to have a spasticity early, due perhaps to voluntary efforts on account of the pain and tenderness, followed later by a flaccid condition, due to the paralysis and shown by the loss of response to the faradic current and gradual impairment of the response to the galvanic. Of course, in this condition, we have impairment or loss of reflexes and wrist drop or ankle drop in affected parts.

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Quite a few of the cases have nervous twitchings, and oftentimes convulsions. There seems to be nothing characteristic about them, being the same as we have in other acute infectious diseases, except they come on with about the same frequency with a low temperature. It seems the fever has nothing to do with the convulsions. They are probably of a reflex origin.

Other more or less common symptoms are stupor, sore throat, and skin eruptions. This eruption, when it appears, is usually papular, often extending all over the body, more especially prominent on the paralyzed parts. In other cases, we have incontinence of the urine, retention of the urine, insomnia, and in other cases sleepiness.

Following the classification of Wickman, we are led to group the following symptoms: First, the spinal type which is the ordinary type and usually comes on suddenly, but may have a few days of prodromal symptoms, such as fever, restlessness, diarrhoea, sore throat and general malaise. Sometimes the patient has convulsions, which, as a rule, are of a milder type than those of cerebral origin. Fever about a hundred degrees F. usually lasts for about a day or two; pain in the limbs, back of the head and spine, and tenderness in these regions is often present. After more or less of these symptoms show up and you have told the fond mother exactly what the trouble is, and how it happened, and so forth, a paralysis shows up. Then it is we know the patient has infantile paralysis.

In the second or progressive type, the paralysis, after a few hours, or two or three days of prodromal symptoms, shows up in the lower extremity; the next day or sooner the arms become paralyzed. Later the respiration becomes disturbed and short, due to the paralysis of the diaphragm, followed by unconsciousness and, generally, death.

In the third or bulbar or pontine type, after a day or two of not necessarily severe prodromal symptoms, we find a sudden onset with faintness and generally vomiting. There is often drawing of the eyes, twitching and double vision. In some cases we have loss of deglutition, paralysis of the face, arms and sometimes diaphragm, usually causing death.

The fourth or cerebral type resembles cerebro-spinal meningitis, with pain in the back of the neck and may have opisthotonus. Kernig's sign is often present, but not by any means constant.

In the polyneuritic type, we have pain in the extremities, sometimes involving the joints, but more often along the nerve trunk, usually exaggerated in the paralyzed parts. Spasticity develops early on account of extreme pain, followed later, as a rule, by flaccidity as the degeneration progresses.

The meningeal type closely resembles the symptoms of cerebro-spinal meningitis, except the paralysis is always present.

The last or abortive type includes a great many cases of infantile paralysis. There is no doubt that many cases are erroneously diagnosed. In the presence of an epidemic with any of these symptoms mentioned or none we should be constantly on the lookout for abortive cases. It may be that only a slight and temporary paralysis is all we have, and sometimes not even that in these cases. Sweating stages, hyperaesthesia and irritability should be regarded suspiciously during an epidemic. To show how carefully one has to observe during an epidemic, I report the following case:

B. S. aged three. Family history negative. Former history unimportant. History of present attack: May, 1911, child had malaria. On account of not persisting in the use of quinine, patient had recurrent attacks in June, July and August. On August 1, the spleen was large and palpable, even almost to the median line and as low as the umbilicus, and plasmodia were present in the blood. Quinine seemed to have no effect, so I gave him quinine and urea hypodermically and arsenic in small doses. In about ten days his malaria improved, but I noticed that when he tried to walk he

had no use of his right leg. Galvanic current showed normal reaction on the left side and degeneration on the right. This patient had infantile paralysis, complicating his malaria, and it was discovered only after almost a recovery. It is interesting to note that there were two cases of infantile paralysis in the same block following this case.

SYMPTOMS OF POLIOMYELITIS.

By LOUIS LEROY, M.D.,
Memphis, Tenn.

We have had the disease of acute poliomyelitis on our reportable list of the State Board of Tennessee for some time in anticipation of some outbreaks or epidemics within our state. Up to the present, however, we have only had reported a few scattering, isolated cases, with not enough to warrant the name of an epidemic at any point. Personally, I have only seen a few cases, not more than half a dozen probably in our state within the last half dozen years. It is a very small number to offer very much of personal observation. They have started first with the ordinary symptoms of an infection, but with no one definite symptom that I call to mind. All of the cases have been in children. Three cases that I recall have followed attacks of diarrhea, one of them following about five weeks after a diarrhea of unknown cause, lasting nearly ten days or two weeks. Of two more cases I saw one last week or ten days ago that gave a history of adenoids, and slight throat irritation for ten days or so previously, which was only half way treated by home remedies, and yet neither of these cases got particularly better nor worse. I remember remarking at the time the possibility of some connection between the trouble and the subsequent infection.

The general symptoms start in with a feeling of malaise, considerable restlessness and crying, with a general rise in temperature, which has been rather sudden, within twelve hours or so running up to 101. In none of the cases I have seen has there been any convulsions, although they are reported in other cases. The digestive tract at the time of the onset of the disease has given very little of the characteristic symptoms. There have been anorexia, coated tongue, and possibly in one or two cases a little vomiting, which have been the only symptoms referable to that tract, nothing more than would be expected in any acute infectious disease in young children. A blood examination has not been made in but two of the cases that I know of, in which cases we had a small degree of leucocytosis which did not persist for long. Pain and a disinclination to be moved have been rather definite symptoms. Pain upon pressure upon the back while lying down from the neck down has been rather severe. There has been some slight rigidity, even suggesting a beginning meningitis. The symptom of pain in the muscles usually referred to by writers on the subject has not been marked, and for the first day or until paralytic symptoms were actually beginning we have not seen very much greater sensitiveness in the muscles to be affected than in others. The disinclination to be moved and crying pain upon moving I take to be simply an expression of pain produced in the inflamed areas by actual pressure or bending or twisting of the vertebrae. The paralysis has come on in those cases I have seen within two days, with the exception of one case, in which the patient was sick for a week before the paralytic symptoms became definite. While the paralysis may occur in any of the muscles, the legs have suffered more, and of those the anterior portion of the mus-

cles, that is, the tibialis anticus and extensors have suffered more than any other groups of muscles in the small number of cases I have observed. Of course, we are familiar with the various groupings which we find in literature, as the forearm and upper arm groupings, and those things, but that seems to comprise about half of the cases. I suppose the legs and arms, are affected about equally. In the last case which I had a chance to observe an unusual distribution was present affecting one arm and both legs.

The improvement in the cases generally begins to come about in a couple of weeks after the disease has practically subsided and continues possibly under medication, massage, general treatment, etc., for possibly a year. I have not seen any marked improvement occur after that length of time.

The relaxation of the paralyzed muscles will give often a tendency to easy luxation and relaxation of the joints, which is quite troublesome and may be so extensive as to render some sort of cast or leather retaining device necessary, in order to prevent trouble of frequent luxations and the pain associated with them.

The reaction of degeneration is valuable in the diagnosis later in the disease, but unless the disease is more or less prevalent I fear that most of us will not resort to it until such time as paralysis has already developed, in which case we are generally able to make a diagnosis without it. Lack of irritability of the nerves and lack of response to the faradic current and contraction of the muscles with the mild galvanic current is more or less characteristic. But, as I have said, I fear that most of us do not avail ourselves of this until after the diagnosis is pretty well established on a clinical basis.

Atrophy of the muscles is sometimes very marked and is dependent largely upon the degree of destruction which has occurred.

CHRONIC HEART DISEASE WITH SOME EARLY DIAGNOSTIC SYMPTOMS.*

By J. H. HONAN, M.D.,
Bad Nanheim, Germany.

There is perhaps no more important subject in clinical medicine than that of early diagnosis of heart disease.

However much has been said and written to emphasize the importance of an early diagnosis in heart troubles, I make no apology for again calling attention to so vital a subject, one so full of importance and of such general interest to the family physician, to the surgeon, to the specialist; indeed, to the practitioner of every branch of medicine.

I here make an arbitrary classification to eliminate the unimportant symptoms and bring before you the more clearly and briefly those which are essential to an early diagnosis.

This classification gives us three divisions of heart symptoms grouped in the order of the importance as a study for diagnosis.

The first, let us call "the inferred group," embracing that large group of symptoms *referred* from other organs of the body, having no connection directly or indirectly with the heart. These are referred to the heart because of the nervous impulse or on account of location of the impulse felt by the patient. The organs most accountable for these referred sensations are the stomach and liver.

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Occasionally a floating kidney, the uterus or ovaries may also be the seat of the referred heart symptoms. We need dwell on these no further than to differentiate them from the next group.

In this second group will fall that large class of symptoms that have caused such discussion among clinicians and pathologists. These are the functional symptoms for which there can be found no pathological lesion. Pseudo cardio vascular symptoms are of intense interest to every student of medicine, whether he be devoting his time to some special branch or to general practice. The ability to classify this great group will measure the standard of the diagnostician, for in so far as he is able to differentiate the false from the true, the functional from the organic, will the ground of contention be cleared between the clinician and the pathologist?

I have neither the assumption nor the scientific basis from which to draw any sharp lines of classification, as there are many questions in cardio vascular pathology still pending, and which I fear must wait some time for definite classification.

The third group of heart symptoms may be designated as *organic symptoms*, for which there are always pathological changes in the cardio vascular tissue, changes which are physically demonstrable either macroscopically or microscopically. This group on the whole is the most easily recognized. There are, however, certain symptoms pointing to this group which are often both puzzling and taxing to the skill of the clinician to differentiate or rather to decide whether they belong to this group or in group two.

Mackenzie has shown that observations extending over some twenty or thirty years have changed his views on points of pathology in the heart muscle. Indeed, we are today in a transitional stage of cardiac pathology, when the foremost workers on this subject consider obsolete that which was yesterday given out as standard. Until the laboratory worker and the clinician co-operate in a long series of observations we must wait for the final word on many of these questions.

The important thing for us as practitioners is to observe carefully what the laboratory workers have established as practical for diagnosis in blood pressure, in polygraphic readings, in electro cardiograms, in orthodiagrams, etc., etc., and apply these as far as possible in our private practice.

In attempting a classification of cardio-vascular diseases, I realize that such an attempt will meet much opposition, but until some of the questions now being studied by several different observers in Europe and America are cleared up, personal opinion must necessarily prevail in deciding the place of many of these symptoms. Until pathologists and laboratory clinicians can give them a definite classification, there must remain this uncertainty. I feel, however, it is time the practitioner had some form of classification on which to base a diagnosis.

In considering diseases of cardio-vascular nature from a diagnostic standpoint, we must include in such consideration that great group of vital organs in which circulatory equilibrium is accurately adjusted, and necessarily exquisitely sensitive to any alteration in supply of blood. The functional workings of these organs are so harmoniously timed to one another that the slightest deviation from the normal in afferent or efferent vessels of the one may naturally in a short time interfere with the functional activity of the entire group.

In the hope of stimulating discussion on this important subject I am calling attention to some of the cardinal symptoms that must be recognized in the earliest beginnings of heart disease. The subject is so broad and presents so many phases that in a paper of such limitations I can only hope to touch on those of greatest moment.

I want to plead for more careful and sys-

tematic observation on the part of the general practitioner. He it is who is in close touch with the patient before and at the time when the earliest manifestations of heart weakness are shown. He alone is in position to observe the earliest comparatively insignificant deviations from the normal and study the subtle changes which lead to a loss of reserve force of the myocardium.

On the reports of the general practitioner the consultant must depend for connected changes from the earliest beginnings.

We should encourage the general practitioner in making these reports. Such papers should receive an important place on the program of every medical society, as these papers have far more practical value in diagnostic work than reports from hospital wards. It is the very early symptom, the first noticeable change which takes place, that is important.

When dyspnoea or oedema is present it is not then difficult for the average man to make a diagnosis. It is of vital importance to the patient and also to the practitioner for the latter to recognize premonitory symptoms of insidious and serious heart trouble.

The usual method of estimating normal force of the heart is by testing the field of cardiac response and judging the limitations according to the individual. As no two individuals respond alike in health it becomes a personal question of discrimination between individuals. In this matter the knowledge and experience of the family physician with the individual is invaluable.

Dyspnoea is now considered one of the earliest signs of a weakened myocardium, yet we know that when dyspnoea is present there has already considerable change taken place in the muscle fibre.

I hope the day is not far distant when every family physician will have a sphygmotonograph with which to register the blood pressure, the jugular pulse and the brachial pulse at the one sitting.

With the improved instrument this can be done in the office at the first examination in five minutes. The instrument, which is simple, requiring little mechanical skill, gives one a graphic record of what the heart is doing as written by the organ itself.

A little study of Mackenzie's "Pulse," or John Hays' "Graphic Methods," or that excellent book just from the press, "Mechanism of the Heart Beat," Thomas Lewis, of London, will soon enable any one to interpret these readings and detect at a glance an auricular fibrillation and the significance of the a. c. interval. If the family physician would take a polygraphic record of such cases once every three months or six months in the earliest stage of the trouble it would be of inestimable value in judging the rate at which these insidious diseases progress.

Our methods of diagnosis of heart diseases have been so crude and inaccurate that a large per cent of pathological conditions have gone unrecognized. This has been shown by a number of clinicians and recently in a masterly report by Dr. R. Cabot, of Boston, before the A. M. A. at St. Louis.

There is no doubt that the electro-cardiograph, the orthodiagraph and the sphygmotonograph have come to stay. Many of the most conservative on both sides of the Atlantic are making now a routine of having their cardiac cases examined by these instruments. They have recognized that these instruments have added exactitude to their diagnosis and prognosis. They have done much more than this; they have pointed out errors in therapy, which have been invaluable as a guide in treatment. The polygraph has shown us the mischievous results of digitalis, as Lewis and Mackenzie have demonstrated.

Since His, in 1893, discovered the a. v. bundle which bears his name, there has been an entire change in the study of heart diseases. This important discovery of primary tissue bundles along which the contractile impulses travel has enabled us to approach the subject from an entirely different plane.

Extrasystoles when occurring in later life or when due to exercise only, are a significant symptom of heart weakness. These need not be confounded with the extrasystoles of the neurasthenic type which are functional. The polygraphic tracings often give us the first indication of auricular fibrillations, extra systoles, pulsus alternans changes in the a. c. interval, all pointing to functional disturbance which may be very significant in making an early diagnosis.

Endovascular pressure has for its cause three important factors, namely, heart force, peripheral resistance and the viscosity of the blood. This naturally excludes hypertension, due to nervous rigidity.

In considering blood pressure as a diagnostic symptom we must carefully study causal factors before jumping at conclusions, for it is only after a most careful analysis of all these factors that one is able to give blood pressure its proper significance as a diagnostic symptom.

Arterio-sclerosis holds a pathetic interest for the medical profession as in no walk of life is the per cent of life mortality so great as in that of the practice of medicine. The peculiarity of the physician's life, the irregularity of his hours, the intense strain he must often undergo for hours and hours at a stretch, the loss of sleep, the constant appeal to his sympathies, that brain-racking feeling that something more might have been done for his patients; these are more than sufficient causes for the medical practitioners' heavy tax in arterial degeneration, and I am convinced the mortality per cent here given is very conservative for the actual mortality of this disease in the medical profession. It is my experience, and I think the experience of most consultants, that arterio-sclerosis is increasing rapidly in general, particularly in the medical profession. Records show more that 60 per cent of the physicians who have submitted themselves to examination are suffering from some form of arterial disease. Sixty-two and five-tenths per cent of the physicians on my case records show a vascular disease in some form.

We have learned to regard high arterial tension as a valuable diagnostic sign which may indicate a number of morbid conditions having usually as a causal factor the absorption of toxines.

High arterial tension *per se* does not require drug treatment, but where it continues for some time we should insist on correctives, as regulated diet, refraining from some bad habit, easing up on business hours, etc. Though a high blood pressure may continue for years without any untoward symptoms I consider a pressure of 180 M. M. H. g. or upwards as an unfavorable prognostic sign.

Valvular diseases and defects are perhaps the easiest of all heart diseases to diagnose. Their interpretation, however, calls forth the widest divergence of opinion among medical writers.

The tendency heretofore has been to attach a much more ominous significance to valvular defect than was due them, and no doubt many patients have unnecessarily suffered tortures from fear of sudden death, due to false or erroneous interpretation of a valvular murmur.

I fear the pendulum is today swinging too wide in the other direction, and serious mistakes may be made by the younger and less experienced men in the profession, because of the writing of many very good diagnosticians, some of whom speak as lightly of a simple valvular defect as if it were nothing more than the loss of a tooth.

One might infer from some of these writings that a valvular defect is in no way an indication for the slightest restriction in physical exercise; that a man suffering from a mitral stenosis *per se* might with perfect impunity enter the marathon races, contest for records of mountain-climbing or perform any Herculean test of strength. Records show that patients with simple valvular murmurs may live comfortably for many years, while following the ordinary vocations of life, with-

out involving any risk of serious heart trouble. I have three such cases now under observation, one of which I have spoken of elsewhere. Two of these cases have had leaky valves for ten and twelve years, respectively, without any indication of loss of reserve force of the heart.

I believe until the average general practitioner becomes more familiar with the causes of heart murmurs and can more readily differentiate between pseudo and organic, between a functional and a serious, between a simple valvular defect and an insidious progressive valve lesion, we should be more conservative in our public utterances and writings. Often the history in these cases is shrouded in obscurity, and we are unable to ascertain the approximate date of the causal factor or exciting cause, and hence cannot calculate the time required to bring about the condition found on examination. It is therefore possible only after continued observation extending over considerable time to give a positive diagnosis and a reliable prognosis.

Among the very early symptoms of weak heart is a distress or pain in the right hypochondriac region. This distress or pain is often the first indication the patient has of any trouble, and is usually the cause of his seeking medical advice.

The sensation complained of by the patient is more often a distress or uncomfortable feeling located from the right nipple to below the last rib.

Examining the region one finds a congested liver and portal veins, the lower border of the liver often extending two to four finger widths below the last rib. The liver capsule may be so distended as to be very sensitive to pressure. The congestion in the portal veins and the pressure due to it may cause a general discomfort and the patient not infrequently refers the whole trouble to the stomach. When the liver capsule becomes stretched there is then pain and disturbed liver function, which, if not arrested, goes on to cirrhosis, ascites, cyanosis, stasis of the right heart and cardiac failure. Frequently before the congested liver has reached this advanced stage, there is sufficient pressure against the diaphragm and lungs to cause embarrassment of the lung excursion, naturally occasioning encroachment on the already enfeebled heart.

Dyspnoea is usually the first symptom observed by the patient, and but too often ignored by patient and doctor until other and more serious symptoms arise. If there were some accurate means of determining this insidious disease at the onset many valuable lives would be saved.

By studying cardiac dyspnoea, which is naturally a myocardial symptom, depending on the actual condition of the muscular tissue for its beginning and intensity, the amount of exercise and the intensity of the dyspnoea we may judge with some degree of accuracy the condition of the myocardium and its capacity to maintain the normal circulation.

In our examination in these conditions we must take cognizance of the condition of the lungs and first reassure ourselves there is no bronchitis, infarc, bronchopneumonia, hydrothorax, or emphysema.

Every case of dyspnoea, no matter how slight, deserves the most careful investigation and when we have cardiac dyspnoea to deal with we should give it *very careful* consideration, for we may be sure of *this* that so long as the causal factors are present and active the condition will continually progress.

Dyspnoea is not only the first symptom, but it is the most constant and by far the most important symptom of myocardial weakness, and according to its great diagnostic significance it is entirely too little studied and understood.

Cardiac dyspnoea appears in two forms, one due to exercise and the other, the paroxysmal form, or the so-called cardiac asthma.

The first is an isolated form, due entirely to the inability of the heart muscle to meet the extra demand, even on slight exercise.

This form of dyspnoea is entirely dependent on the weakened heart muscle and if the integrity of the myocardium be restored the dyspnoea is at once relieved.

The second or paroxysmal form is due to a diseased condition of the blood vessels of the heart and their temporary inability to supply the myocardium with the proper amount of blood, or it may be due to the peritheral resistance being so great as to cause temporarily a relative or absolute myocardial insufficiency. Either form may be classed as a symptom of latent heart weakness.

We here see that causes of this important manifestation may be *intra-cardial,* as loss of natural reserve force of the heart muscle, or it may be *extra-cardial,* as increased peripheral resistance.

Any disturbance of respiration has a marked influence on the blood current and on metabolism and indeed for every organ and function of the body.

Cardial dyspnoea has been studied by many careful observers, among whom may be mentioned Krehl, Romberg, Kraus, Welch, Cohnheim, Kussmaul, Neusser and others. There have been many theories advanced without entirely removing doubt from the pathogenics. I am of the opinion that the paroxysmal form is due either to inability of the right heart to force the blood through the lungs, thus causing a want of blood in the organs and central nervous system, or that the embarrassment of the left heart is so great as to incapacitate it for supplying the normal amount of blood to the respiratory center, due more to lack of quantity than to quality. Brain anemia often occurs in cardial asthma, causing vertigo and collapse. Either of these theories leaves the primary cause in the myocardium.

Dyspnoea is usually met with in the form of tachypnoea combined with polypnoea, as the lungs in almost all cases of cardiac dyspnoea are inflated or enlarged.

Again we find the dyspnoea only manifested as a slight added effort to maintain the function with no increase in the frequency. Indeed, in the very early stages of myocardinal insufficiency I have noticed much oftener the added effort in breathing than the added frequency. This I believe to be pathognomonic of the intra-cardial form of dyspnoea, as I have never observed it in the extra-cardial form. These conditions can be studied only under carefully regulated exercise. By such observations one may soon determine if the dyspnoea is due to a transient myocardial insufficiency, or whether it be constant and progressive.

The progressive form soon develops orthopnoea, at which time the rest force of the heart is becoming exhausted and true heart failure is present. The paroxysmal form or cardiac asthma is an evidence of the more advanced stage of myocardial insufficiency, and may be due to a relative or to an absolute insufficiency of the left ventricle, while the right ventricle is entirely undisturbed in its functional activity.

Arterio-sclerosis and interstitial nephritis are almost the sole causal factors in producing cardiac asthma. In this form the pulse may be quite regular and fairly strong, but not strong enough to overcome the peripheral resistance of the diseased vessels. The blood pressure and wiry pulse will give an indication to the diagnosis.

Arterio-sclerosis is such an insidious disease and often so obscure that in the great majority of cases an early diagnosis is impossible. It is a disease of as vital interest as any in the whole category of medicine.

I believe if it were possible to secure statistics of this disease in the well-to-do, we would find that forty per cent of this class of society die as direct or indirect result of this trouble. Some one has truthfully said that "more wise men than fools are affected." This is essentially a disease of the thinking portion of mankind, the strenuous life taking a heavy toll annually for the distinctions won by such a life.

We should never lose light of the cogent

fact that we may have a serious heart condition without any increase in the size of that organ, and with practically no alteration in the action.

Because of the difficulties in diagnosis and of the special clinical opportunities I have had in observing the first symptoms of exhaustion of the work force of the heart I have elected to bring some of the most important symptoms before you for study.

Another very practical reason I have in making this classification and confining my paper to a study of the work force only, is the great importance of an early diagnosis of the first manifestations of heart weakness. An *early* diagnosis is of *vital importance* to the *patient*, for it means that if proper treatment be instituted the insidious disease process may be checked and the patient enjoy a prolonged and comfortable life.

SOME INTERESTING CASES OF BRAIN SURGERY.*

By JERE LAWRENCE CROOK, A.M., M.D.,
Jackson, Tenn.

The subject of brain surgery has always been of special interest to me, due largely to two reasons. In the first place because although injuries of the brain attack the very citadel of life itself, yet the results of operation in this region have not been as brilliant as elsewhere, thereby stimulating one's best efforts for improvement; and in the next place it has fallen to my lot to have a rather large proportion of these cases come to me for operation, and their variety has covered a wide range. It has been my privilege to present papers on this subject several times, in all of which I have stated with emphasis some few points regarding what I conceive to be the attitude of the conscientious surgeon toward this type of injuries. In the first place, injuries of the scalp and skull should always be approached by the surgeon with every facility for doing radical, thorough, and aseptic work. Again, one should not wait for symptoms of intra-cranial injury to present themselves before resorting to operation. Injuries to the brain call for promptness, as well as preparedness. To wait for symptoms is to let slip the golden opportunity for doing effective work. The diagnosis should be made at the first operation, and as stated before, one should be ready to do anything that may be indicated when he lays open the scalp and exposes the field of injury. Nothing short of absolute knowledge of the conditions present should satisfy the conscientious surgeon. Therefore I hold and have stated on several occasions that when a patient presents himself with an injury to the head the surgeon should operate at once, and determine whether or not there be a brain injury. If there be a wound in the scalp, the head should be thoroughly shaved and the wound enlarged so that there need be no doubt whatever as to whether or not a fracture exists. Should there be no wound, but simply a hematoma to the scalp, and the surgeon is not convinced of the absence of a skull injury, he should incise the hematoma under strict aseptic precaution, and examine the skull with his eye, and fingers in rubber gloves. A strict adherence to this policy will forever preclude the possibility of the surgeon having to treat cases of traumatic epilepsy in after years, due to neglect at the time the injury was first treated.

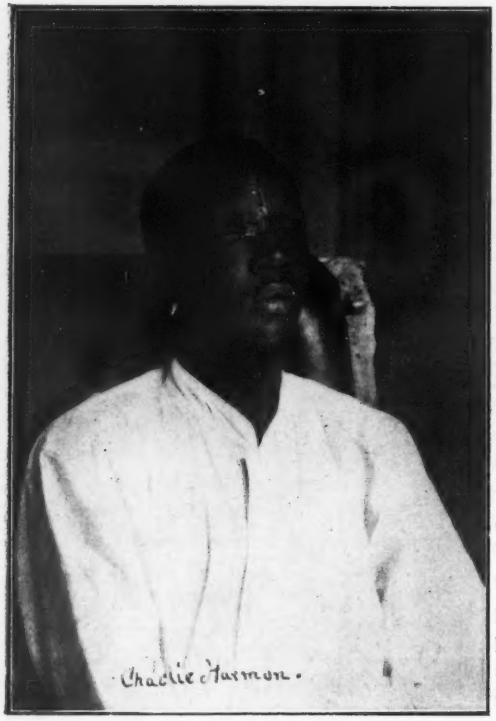
Without entering further into this important subject, I shall content myself with reporting briefly four interesting cases, three of

*Read before the Section on Surgery of the Southern Medical Association at Hattiesburg, Miss., November 12-14, 1911.

which have recently come under my observation.

CASE 1. JOE ELDRIDGE, WATER VALLEY, MISS.

This patient was brought to Jackson to Dr. J. T. Herron's Infirmary totally unconscious, with the history of having been comatose nearly six weeks. There was a history of mastoid disease of long standing, and also of having received a blow on the side of the head about ten days before unconsciousness began. The patient arrived during the session of the West Tennessee Medical and Surgical Asso-



ciation, and a number of the members had the opportunity of seeing him. A diagnosis of brain abscess was made and concurred in by all, and at the request of Dr. Herron I operated the next morning. The scalp was laid back over the mastoid region and the point of election chosen for the trephining was a point on a line perpendicular to Reed's base line beginning one and one-fourth inch behind the middle of the external auditory meatus, and one and one-fourth inch above the base line. After the removal of the button, bulging of the dura occurred, showing great tension. The abscess was opened in a backward and downward direction,, but was not found until the knife touched a point two and a half inches below the surface, evacuating a large quantity of pus, which gushed out over the instrument table. Tube drainage was inserted and the operation completed. Three days after the operation the patient was able to recognize and speak to his friends. The abscess drained freely for three weeks, the wound slowly healed and the patient left for his home six weeks afterwards, entirely recovered.

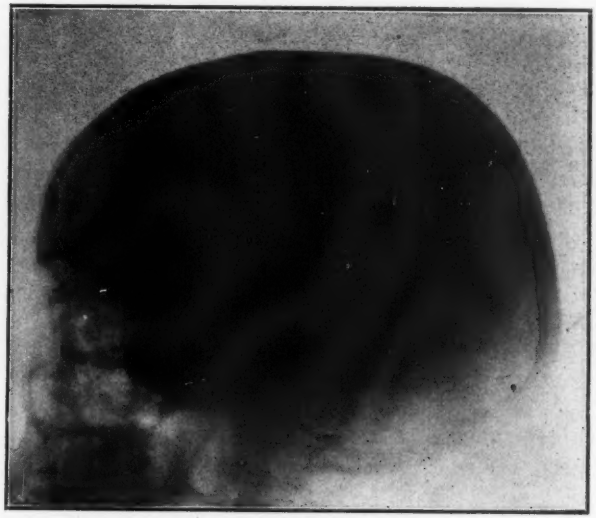
CASE 2. E. R. ROBINSON, COLORED. AGE 20.

This boy fell from a trestle on the I. C. Railroad, near Dyersburg about the first of September, 1910, falling about thirty-five feet and striking the back of his head on some hard object. He had practically no attention at the time, and was brought to me by his father, fifty-six hours after the injury, in an unconscious condition. Operation revealed a comminuted fracture in the left occipito-parietal region. During the operation, after elevating the upper and anterior portions of the fracture, the elevator was placed under that portion of the fracture ranging toward the medulla. While I was in the act of elevating that portion of the bone, the ether having been suspended for ten minutes prior to this time, the patient suddenly stopped breathing. For seven minutes, timed by a gentleman present in the room, artificial respiration was practiced, stimulants given hypodermically, and every effort made to resuscitate the patient. At the end of seven minutes, respiration was resumed, the operation was rapidly completed, and the patient put to bed. He made an uneventful recovery. This case was reported in the American Medical Association Journal the chief point of interest being the long duration of suspended respiration. I belie that

the shock transmitted to the respiratory center in the brain, through the manipulation of the bone elevator was responsible for the respiratory failure.

CASE 3. AMOS NICHOLS, COL. AGE 18. STUDENT.

While walking along from school on October 30, 1911, at 8 p.m., was struck with a brick in the left parietal region, producing a contused wound with laceration of the scalp, the wound not going down to the skull. He was never able to speak after his injury, but immediately walked back to his home, some 300 yards distant. He was attended by a colored physician and the wound dressed. The case was operated on by my father, who did not see him until November 2, sixty-four hours after the injury, and who found him speechless and with complete paralysis of the right side, and a temperature of one hundred and two and one-half. Upon his advice, an operation was done as soon as the patient could be brought to our sanatorium. The scalp was freely laid open with a horse-shoe flap, exposing the skull, which was found badly crushed and depressed, a triangular piece one inch by one and one-half inches being found driven into the brain and broken entirely loose from the adjacent structures. This was removed, the wound enlarged sufficiently to thorougly elevate the depressed portion, and the brain was examined carefully to see that no other loose pieces were driven in. A quantity of clotted blood was removed from between the skull and dura, rubber and gauze drains were inserted, and the operation completed. The patient's condition at the close of operation was bad, shock being profound.



X-Ray Picture of Charles Harmon, Showing 32-caliber Bullet Imbedded in Posterior Wall of Skull, on a Line with Point of Entrance in Front. The Long Object is a Piece of Wire to Test Penetration of the Ray.

He was treated with normal salt solution by the drop method in the rectum. He rallied after a few hours, and at this date, two weeks after operation, has normal temperature and pulse, with secretions acting normally, and is beginning to talk and use his foot a little. The injury was quite extensive along the fissure of Rolando, the site of the centers of speech, right arm and leg, there being much laceration of brain substance at this point. Every indication points to his complete recovery, with

restoration of the power of speech and the use of his limbs as soon as the brain has time to become fully healed.

CASE 4. CHARLIE HARMON. AGE 17.

Insert small picture here.

While looking in the window of a citizen of Jackson about 10 p.m., on September 15, 1911, the citizen, presuming he intended to break in his home, fired through the wire gauze screen at a distance of about eight feet, with a thirty-two calibre revolver. The bullet entered midway between the eyebrows, immediately over the frontal sinus. The boy turned to run away and was shot a second time, this bullet entering at the angle of the jaw and passing between the muscles of the face and through the inner and lower angle of the eyeball and emerging between the lids. He was brought to my sanatorium at 11 p.m., having been found on the street by the police. He was totally unconscious, with labored respiration, slow pulse, and every symptom of serious brain injury. Operation was done immediately, scalp being laid back over the wound in the head, and the bullet found to penetrate the skull. A trephine opening was made, which was enlarged with Ronguer forceps and the frontal sinus opened. The wound penetrated the posterior wall of the sinus and this was treated likewise with trephine and Ronguer. A button hole slit was found in the dura and this tissue was cut away and the bullet wound in the brain followed with an artery forceps for 2 1-2 inches. A large amount of clotted blood was washed away, two small arteries tied, and a gauze drain inserted about two and one-half inches into the brain, and the operation rapidly completed, as the patient's condition was very bad. The next morning at 9 o'clock, I saw the patient again and found him perfectly couscious, in full possession of his faculties. He talked rationally and intelligently, asked for breakfast and stated the exact amount of money that was in his pants at the time that he was shot, which I found to be absolutely correct, $1.65. He progressed without an untoward symptom to recovery, except that two days after the first operation I was compelled to remove the eye which had begun to slough. Three weeks after the operation, I carried him to Memphis where Dr. Lawrence made the X-ray picture which I here exhibit, which shows the bullet sticking in the posterior wall of the skull on a direct line with its point of entrance. The piece of steel wire shown close by the shadow of the bullet was placed in the patient's hair to show the penetrating power of the X-ray and its ability to project the shadow through both sides of the skull. The patient went to work at his usual occupation in a local pool room five weeks after the injury, and has been working steadily ever since. I exhibit photograph of patient, together with the X-ray picture.

DIFFERENTIAL DIAGNOSIS.

Presented through an analysis of 385 cases. By Richard C. Cabot, M.D., Assistant Professor of Clinical Medicine, Harvard Medical School. Second edition. Octavo of 764 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, $5.50 net.

This is another weapon in the armament of the physician who would be sure of his diagnosis before he chooses his therapeutics. Diagnosis is the key to success in medicine. When a doctor absolutely knows what is the matter with the patient it is easy to decide what to do. All his studies in class room, except materia medica and therapeuticss, all his laboratory study is to the sole end of diagnosis. True other things also are based upon these studies, but diagnosis comes first.

In this book Cabot justly features pain, the danger flag of physiology, as the leading element in differential diagnosis. Of the 745 pages, 400 are devoted to consideration of pain in all its aspects, localities and imports.

Then follow the various phenomena of illness, their analyses and significance. The construction of the work is clinical. 383 cases being considered. No treatment is suggested save half a page of dietetics at the close.

A second volume along the same lines is promised. If it should prove as valuable as this one, it will be welcome.

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Next Meeting Jacksonville, Fla., November 12, 13, 14, 1912.

Dr. J. A. Witherspoon, President-Elect of the American Medical Association

The greatest honor that can be conferred upon an American physician is the presidency of the American Medical Association. It is a position that is accorded only to those of gre merit and distinction, and such men as Wyeth, W. J. Mayo, Gorgas, Welch, Murphy and Jacobi have been called upon to serve as presidents of our national medical organizatio which has a membership of thirty-five thousand physicians. When a physician is so eminent in his profession as to be the only one to be pla in nomination before the House of Delegates, representing all the medical associations of all the states in the Union, and also our territorial possessions, it is a remarkable recognition of his merit. Therefore the friends of Dr. Witherspoon were very happy when, after his name had been placed in nomination by one of his confreres, Dr. A. B. Cooke, of Nashville. delegates from the East, North, West and South rose to voice the sentiment of the physicians at their various sections as favoring this distinguished son of the South for President of the American Medical Association, and their enthusiasm was unbounded when he was elected without a dissenting vote.

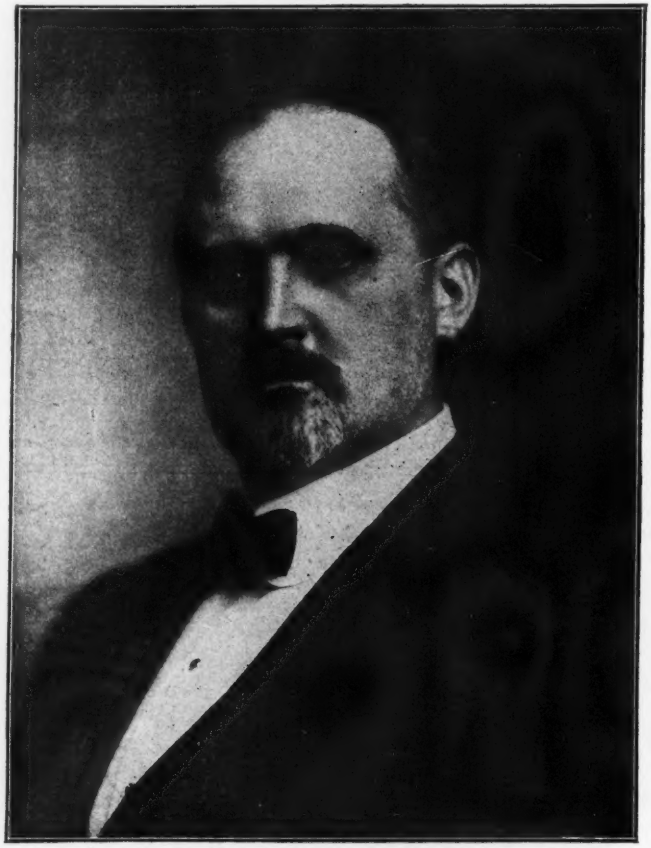
That Dr. Witherspoon will measure up to the responsibilities of and grace the position is not doubted by any one who knows him. Indeed, it is most fortunate for organized medicine, at this time, that we have for our leader a man of such great wisdom, one who is so remarkably endowed with the divine gift of eloquence.

Dr. Witherspoon has received many honors at the hands of his professional contemporaries. He has been president of the Tennessee State Medical Association, and of the Mississippi Valley Medical Association, and Chairman of the Section on Medicine of the South-

ern Medical Associatiton. He has also been President of the American Association of Medical Colleges.

He has been particularly interested in, and has done much for the advancement of, medical education. He has held the chair of practice of medicine in Vanderbilt University since 1894 and he, with his confreres, have built up the medical department of that institution to its present position as one of the best of the Southern medical schools. He was a member of the Council on Medical Education of the American Medical Association from its foundation until his election as president, and his name will always be linked with the great work accomplished by the council in raising the standards of medical education.

While Dr. Witherspoon is a national figure in medical affairs, he has, at all times, been loyal to Southern ideals. It was his pride in and devotion to Southern medicine that impelled him and his associates to establish, at great personal sacrifice and financial loss, the Southern Medical Journal, of which he was editor-in-chief for four years. He relinquished this position for the Southern Med-



DR. J. A. WITHERSPOON,
PRESIDENT ELECT OF THE AMERICAN MEDICAL ASSOCIATION.

ical Journal to merge with the Gulf States Medical and Surgical Journal and the Journal of the Southern Medical Association, in order, as he said, "for the South to have a first-class medical journal, one that could be maintained upon the highest ethical standards." We are proud to say that he is still interested in the Southern Medical Journal, and is one of its associate editors.

No man in American medicine has more genuine friends than Dr. Witherspoon, and they are delighted at his merited promotion. We of the South are particularly pleased to have a man at the head of organized medicine in America who will reflect great credit upon our section.

While we favored Louisville as the place for the next meeting of the A. M. A., yet we are glad that the association will meet in a Western city, Minneapolis, for the people of the Northwest, whereby the physicians from all sections of our country may know something more of Southern men, of whom Dr. Witherspoon is a splendid example, and may hear, at least for one time, genuine Southern eloquence and oratory, which he typifies more than any other man in Southern medicine.

Dr. W. D. Haggard, Member of the Council on Medical Education of the A. M. A.

The promotion of Dr. Witherspoon to the presidency of the American Medical Association left a vacancy in the Council on Medical Education. Dr. Jacobi, with his characteristic wisdom, selected for this important position one of Dr. Witherspoon's confreres in Vanderbilt Medical School, Dr. W. D. Haggard, of Nashville. This appointment gives universal satisfaction, particularly to those interested in medical education in the South.

Dr. Haggard has a national reputation as a surgeon, and he is equally as well known as a "prince of good fellows." He succeeded his distinguished father as professor of gynecology and abdominal surgery in the Medical Department of the University of Tennessee, and when that school at Nashville and the Medical School of the Nashville University voluntarily went out of existence to aid in building one great medical college at Nashville he was given the same chair in Vanderbilt University.

He succeeded the late Dr. Elias Davis, the founder of the Southern Surgical and Gynecological Association, as secretary, and it is through his indefatigable efforts that this organization is maintained as the greatest of the surgical associations in America.

Dr. Haggard was also one of the founders of, and was one of the managing editors of, the Southern Medical Journal. Since its merger with the Gulf States Medical and Surgical Journal and Journal of the Southern Medical Association, and the editorial offices moved to Mobile, he continues his connection with the Journal as one of its Associate Editors.

It is most fortunate for the cause of medical education in the South that we have, as our representative in the Council on Medical Education of the American Medical Association, a man of Dr. Haggard's ability and training, and we heartily congratulate him upon his deserved promotion.

A Medical "Baedeker"

In 1906, one of the editors, in a paper entitled "Notes of European Travel" said: "It is to be regretted that some American physician, who has spent much time in foreign travel and study, has not written a book giving information regarding European physicians and surgeons of note, the hospitals, and the various courses given in the medical centres of Europe. Such a book would be to the American physician in Europe as the "Baedekers" are to all travelers. It often happens that information regarding the various hospitals and

the courses given in them is obtained at a great expense and loss of time, when it could be obtained in a few minutes from a medical "Baedeker," were there such a book published."

Such a book has been written by the man perhaps best fitted for that work, Dr. James H. Honan who was, for many years President of the Anglo-American Medical Association in Berlin, and almost every American physician who has been to Berlin in the past two decades is under obligation to him for many courtesies. It is called "Honan's Hand Book to Medical Europe" and it gives a concise and comprehensive outline of the medical work of the continent and in England and Scotland.

Dr. Honan has compiled into a very small volume an enormous amount of information that is needed by every physician who goes to Europe for post-graduate work. It is also an excellent reference book for those who are interested in European medicine. The index is full and very well arranged, so that at a glance one can find the hospitals and institutions with which all the prominent European physicians are connected. We heartily commend Dr. Honan's work to all who are interested in European travel and in medical literature. It is published by P. Blakiston's Son & Co., Philadelphia.

More About Fee-Splitting

No man whose thoughts, principles and impulses have grown and crystallized into character "down South," will consciously permit another man to insult him, either with epithets of contumely or with dishonest proposals.

There is never any discussion on such an occasion, though concussions will be prompt and a word or two or variegated language may be heard—afterwards.

But sometimes a dishonoring proposition is so adroitly presented that the recipient does not recognize the insult. He may even be so deceived as to its true character that he accepts the terms of the tempter, who assures him "its all right;" "its only fair," "they all do it," and so on. Then some day he suddenly becomes aware that he has been made a party to a dishonest transaction, that he has done a thing he would blush to have his neighbors know, that would cause his innocent children shame before their school-mates, that has dishonored him. Such a man is more to be pitied than blamed. And in just such an unfortunate predicament stands many a good, honest doctor today, for he has accepted a fee from some specialist for the case or cases he has referred to him for care or operation. On the other hand, too many times a surgeon yields to solicitation from some doctor who demands pay for sending him a case, claiming that he can get it or more from other surgeons; that they all do it, etc.

In this case the surgeon or specialist is the victim.

Fortunately this "graft" of fee-splitting has not gained much hold even upon the weaker members of the profession in the South, but it must and shall stop altogether.

This much, every honorable physician has the right to decree and declare, just as every good citizen has a right to insist that murder and arson must cease in his town.

We must learn to realize that when any man proposes a commission, or a divide, or a common interest in the money part of a case, he offers you a gross personal insult, as stinging as the coarse expression that insinuates doubt of your family purity, and which sometimes justifies a bloody expiation "down South;" or were he to charge you with lying. Which would you rather be considered; one who would distort the truth? Or one who would sell the holiest of all trusts and confidence, that of a patient in her family doctor?

The answer is, neither. We have all known and enjoyed cheerful liars whose imaginations supplied their facts and who were companionable and even desirable, especially in camp or on board ship. But who ever knew a man who had sold for gain the

confidence imparted to him under the seal of our confessional, and still sought his companionhsip. Such a fly would make the most precious box of ointment reek with the foul odor of corruption.

It is the duty of every doctor who has patients needing more expert service than he can render, to refer each to the specialist in whose character and ability he has most confidence, without hope or expectation of reward. The slightest hint at such an arrangement is sufficient ground for warning a patient to keep away from the specialist. On the other hand, any surgeon or specialist who receives a hint from a physician that a financial arrangement is desirable should resent it, publicly, as the personal insult it is. In such cases the letter bearing the insulting proposal should first have the name of the patient and the disease eliminated, and all the rest should be published in full as near the home of the insulter as possible. The phrase: "What is there in this for me?" should be answered in one word: PUBLICITY.

The Right Sort of Encouragement

He is not a Southern doctor, but he is on the right side in the "irrepressible conflict" between truth and falsehood now waged by the ethical members of our profession and the unethical pharmaceuticals so brazenly foisted upon them; he is a Pennsylvania doctor, but his hand is as firm and his heart as strong for the A. M. A. Council's decisions in pharmacy and chemistry as those of any professional brother South or North, and he warms our hearts with words such as these: "A journal independent of proprietary interests as yours deserves a larger and more prompt support than, I fear, you receive." "I remit this, my subscription fee for full value received in the quality of your Journal, but more especially I contribute my mite to help sustain you in the unequal fight you are valiantly putting up against the great odds and the unlimited resources of the 'Proprietary Interests.'"

"A brief suggestion, viz: That in each and every issue you give your most prominent space to a list of the medical journals that persist in advertising matter not O. K.'d by the A. M. A. Council on Chemistry and Pharmacy." "Professional pride they have not!" "They can be reached only via the pocketbook." "Keep up the fight!" "You will soon receive the tangible reward and the comfort of a guiltless conscience." Such words of encouragement are more precious to us than we can express. They prove the correctness of our belief, long ago enunciated, namely, that doctors everywhere are sincere in their demand for a medical press that cannot be subsidized; that they will endorse a medical jouranl conducted absolutely independently of the unethical proprietaries; will learn to support such a journal by paying up their subscriptions so promptly that it does not have to depend upon its advertising pages for the money to pay the printers and the postage. The warm approval of this doctor in a Northern city is especially encouraging. It is no sense of local pride that leads him to endorse and help the Southern Medical Journal, but his impulses are to support the ethical principles so outraged by many of the proprietary medicine advertisements when they cause the laity to have confidence in their nostrums because leading medical journals advertise them and print their misleading "reading notices." He sees this Journal depending more upon subscriptions than upon advertisements for its existence, and he hastens to contribute his mite in cash and his might in approving words for the strengthening of our resolutions. Is not this an honorable example for other doctors to follow, especially those of the South? True, many hundreds have already paid their dues, but there are also many who thus far seem deaf to our solicitations, though they must know that both their moral and financial support are needed. Surely they

cannot much longer afford to withhold it, for we are almost their only champion in this fight for ethical medicine.

Finally this Journal desires to honor this friend from another section of the country who has proven his faith by his works. His name is *Dr. D. A. Webb,* and he lives at *Scranton, Pennsylvania.*

To Quarantine, or Not to Quarantine; That's the Question.

Dr. Flexner produces symptoms like poliomyelitis by injecting into a monkey something from the nose of a child with infantile paralysis; therefore in New York, and other cities guided by laboratory findings, they quarantine such cases for six weeks.

Lebredo and Ricio, in Santa Clara province in Cuba, studied 140 cases of infantile paralysis in 140 families, and "in no instance did they find more than a single case in a family," though Cuban families are notoriously large, and sanitary conditions not above criticism.

In the State of Washington, Kelly, Gellhorn and Manning studied 397 cases, and in these close to four hundred instances only eight were found, two in a family, and in none more than two. In Florida investigations lead to like results. Consequently in the localities last mentioned, state officers do not quarantine poliomyelitis.

Dr. Hiram Byrd, Assistant State Health Officer of Florida, in his report for 1911, says many interesting things. Among others are the statements of how the board has spent its money, of which he considers that spent in immunization against smallpox, hydrophobia, diphtheria and tetanus, "the best money ever expended in the interest of public health." He hopes the board may be enabled soon to add immunization against typhoid fever: "Quarantine, in the sense that guards are employed, has long since been abandoned." Violators of regulations are prosecuted after recovery, as for "any other infraction of law." Comparing the importance of smallpox with that of other diseases he reports "482 cases at the Anti-vaccination Hospital near Jacksonville. Of these only two died." Had it been 482 cases of measles there would have been eight or nine deaths; in 482 cases of whooping cough there would have been at least fifteen deaths; yet no one thinks of quarantining them. He considers it impossible to isolate all cases of smallpox for the reason that not much more than half the cases are discovered in time. This is because of failures in diagnosis, neglect to consult a physician and concealment. "Many cases recover without recognition. So what good does it do to quarantine one-half the cases while the other half go free?"

Again, measles and scarlet fever are alike contagious, virulent and with similar difficulties in diagnosis. From habit we quarantine scarlet fever and not measles.

Yet, Dr. Byrd says, the one is just as prevalent as the other.

Glancing from Florida to New York he calls attention to the fact that one poor Irish cook is quarantined for years as a typhoid carrier, when from statistics it is evident that there must be thousands of such typhoid carriers "going round loose" in New York City alone. That Dr. Byrd does not believe in quarantine is evident, but he does believe in vaccination, and thinks the citizens of ever community should be daily informed of the number of smallpox cases present, in order to dispel the inertia which is generally the sole cause of their neglecting vaccination.

There is one instance of crazy quarantine that almost jars one's faith in the generosity of human impulses. A poor fellow with a skin disease that after long discussion was diagnosed as leprosy, was hounded from place to place, from state to state with no place where he might rest in peace. Hostile guards menaced his footsteps, he was isolated in shacks and cabins and abandoned cars, and always forced to move on, until at last, kinder than man, nature relieved his miserable plight

and took him to the dust from which he sprang, and West Virginia soil hid him from his fellow creatures. Yet scientific men, familiar with leprosy, are by far from all agreed that leprosy can be communicated by one person to another. But the years bring experience, and experience creates knowledge, so that sooner or later many errors will die out.

Diseases Prevalent in Summer

The time has come when all over the land, and especially in cities, diseases of digestion prevail. Diarrheas, dysenteries, cholera morbus and cholera infantum bear witness to the presence and activity of various organisms hostile to well-being or even to life. In considering the subject the physician must view it from a double standpoint, that of prevention and that of cure. Prevention implies the exclusion of the germs of disease from the digestive tract. True the system is sometimes in a condition that resists attack, but it is safer not to swallow the germs.

Therefore it is recommended to boil the drinking water and wash clean all fruit and vegetables that are eaten uncooked. But though our drink be scalding hot, and all our food be cooked, and eaten while still hot, yet there are means of introduction ever present, unrecognized and efficient for evil. Chief among instruments for conveying germs to the mouth are the fingers. We bathe the hands before each meal, and feel safe from contamination by them, and so we are at the moment. But we seize a chair or a doorknob reeking with infection, or shake an infected hand of a friend, and the fingers are at once stocked with millions of microscopic organisms ready for introduction to the lips and tongue at every touch.

Everywhere, on the street, in store or office, infection lurks. Uncooked fruits and vegetables are snares for the unwary. Only constant and repeated ablutions tend to insure success. It was not without reason that Moses and Mahomet made frequent washing of the hands a part of their religious ceremony. Consciously or unconsciously they taught sanitation in a way needed yesterday, today and for all time.

Q. E. D.

In college days when a geometrical problem was correctly solved and demonstrated on the blackboard it was a delight to be authorized by the instructor to write below it the magic initials of the latin phrase meaning, in effect, "Which is thus demonstrated." In like manner scientific medicine is now authorized by its instructor, "Clinical Experience," to write after the problem of immunization against typhoid; q. e. d.

For awhile the anti-vaccinationists claimed that the marvelous immunity shown by our army on the Mexican border was explained by the perfect system of sanitation established by the medical corps. In other words, the soldiers escaped typhoid because no typhoid germs were allowed to reach their food or drink.

Now, however, it is shown that during the whole time of mobilization the soldiers had free access to San Antonio and Galveston. They fed in their restaurants, slept in their beds and drank their concoctions. They patronized there the fruit stands and consumed enormous quantities of pies and cakes bought from push carts. Meanwhile in San Antonio there were forty-nine cases with nineteen deaths from typhoid, all civilians; and in Galveston at the same time there were nearly 200 cases. Yet among more than 12,000 men thus exposed, but protected by vaccination, there occurred but one case of typhoid fever.

Typhoid vaccination confers absolute immunity! q. e. d.

"Improving and Ennobling the Human Race."

The Pacific Medical Journal quotes from an exchange of the achievements of Brizebaum, who, it seems, "made certain lizards produce

living young instead of laying eggs," and caused certain insects to change the form of their wings by surrounding them with high temperatures, their young inheriting this modified behavior. The editor also refers to Loeb, who, if our meager information is correct, caused the eggs of a low-grade sea animal to hatch in sea water without having been fertilized by the male element, though how he could be sure the fertilizing element was not diffused through the sea water deponent knoweth not. Perhaps, though, he boiled it. The article also refers to Burbank and his careful, patient work at cross-fertilization of plants.

In these instances the Pacific Medical Journal seems to read a hope that by the aid of science man is about to take up the job of creation where the Creator left off, and "said it was very good." "Yes," quoth modern Science with a big "S," "very good, indeed, but we hope to do better." In other words it is hoped that we may find some way, to use the words of the Pacific Medical Journal, "of improving and ennobling the human race."

It seems to this writer that the said human race has not waited for a Burbank to inspire it to experiment with the grafting of one species of the *genus homo* upon another, and estimating results. That experiment probably began long before "the sons of God saw the daughters of men that they were fair," and has been occasionally repeated and repented ever since. With infinite patience Burbank fertilizes the pistil or female organs of some plant with the pollen, or male element of another, which is different but near akin, and produces improved flowers and fruits, which, by careful selection and culture, become established additions to the treasures of nature's storehouse. Or a coarser variety of miscegenation may give us the Kentucky mule. But when humanity is at stake neither God nor man will consent to any tampering with the stream of racial purity. Their verdict has again and again been recorded in history, proclaiming that the hybrid race shall be inferior to the one of pure blood, and shall not endure. Looking a little higher we read the records of peoples who strove to mate only their very best, their *aristos;* but failure resulted, and the so-called aristocracy fell before just plain manhood. The modern caricature of such a romantic effort may be seen in the frantic struggles of the gilded "400" to attract public attention.

The only way to elevate the human race is for every man to live up to the golden rule, so far as in him lies. Elevation of the spirit must precede and direct that of the body.

Pellagra Not Contagious. No Reason for Quarantine

The origin and cause of most public panics, whether finacial, spiritual or from epidemic disease, has always been ignorance, misunderstanding and false conceptions. For instance, there has never been a money panic within fifty years that a little patience and confidence could not have averted; great revivals forced by the panic dread of hell would be impossible if people meditated upon the 14th chaper of St. John; and yellow fever panics died forever when the stegomya was introduced to educated society. But as one error dies another is born to plague us, and the latest and most insidious of them is the idea that pellagra is a communicable disease.

Though only recently the subject of thorough study, yet pellagra has been so minutely and practically investigated that one may now say positively that there is far more evidence of every kind that malarial conditions are contagious, (and no one even suspects malaria of being contagious), than that such is the case with pellagra.

Those most familiar with it at home and abroad place no restrictions upon the association of pellagrins with the well. There is no quarantine against pellagra. Moreover doctors should exercise the greatest caution in diagnosing as pellagra a case of dorsal erythema on one wrist, or an inffammation of

the gums that admits of some other explanation. Unfortunately we have led people to consider the disease incurable, when such a thing as an incurable disease does not exist—if recognized in time. The evidence all goes to prove that pellagra is caused by something in damaged maize. That points the way to avoid and treat it. Just quit eating imported corn, or using corn products from abroad. *Verbam sat.*

A New Hospital for Nervous Diseases

It will be of interest to the readers of this journal to know that a large modern hospital of about fifty rooms solely for nervous diseases is being opened in Atlanta. The building is located two blocks off the car line overlooking the most attractive part of Grant Park, and is ideally situated for the care of nervous invalids.

This sanitarium is called "The Hospital for Nervous Diseases," and has the following well-known Atlanta physicians upon its staff: Dr. Hansell Crenshaw, Medical Director; Dr. C. W. Strickler, Internal Medicine; Dr. F. K. Boland, Surgery; Dr. J. E. Paullin, Pathology; Dr. G. M. Niles, Gastro-enterology; Drs. Campbell and Ridley, Laringology and Rhinology; Dr. Park Howell, Ophthalmology; Dr. Bernard Wolff, Dermatology; Dr. Edgar Ballenger, Andrology; Dr. C. R. Andrews, Orthopedics; Dr. W. F. Shallenberger and Dr. Annie L. Sawyer, Gynecology.

Mobile, Ala., May 6, 1912.

SOUTHERN MEDICAL JOURNAL, GENTLEMEN:

I enclose copy for a short notice which may save physicians from loss in paying money to a swindler. In explanation, I would state that the man referred to was formerly a reputable book seller, representing D. Appleton Company, that he recently began a campaign using, I understand, not only my books, but those of the Rebman Company, The McMillan Company and Wm. Wood & Co., and that I have heard from more than one physician that he has become a victim of drugs.

Yours respectfully,

W. M. LEONARD, Publisher.

BEWARE!

Gustav Gebauer, formerly a reputable book seller, having obtained one of my order books, is collecting money from physicians in Georgia, North and South Carolina. None of these orders reach me and I am in no way responsible for them.

W. M. LEONARD, Publisher.

The above letter and notice may save some unwary lover of books from vexation and disappointment, to say nothing of financial loss.

Life, Mind and Matter.

How should a physician think of these all important subjects? The conclusion he adopts will have far reaching consequences upon the mainsprings of action and character, and in a secondary degree will seriously affect his social and professional relations.

An answer to the question has been proposed by one who has long had intimate opportunities to study "life, mind and matter" under abnormal or pathological controls. One of our distinguished medical friends has favored this office with a reprint of his interesting paper published under the title that heads this article, in the *Alienist and Neurologist* of May, 1911.

The critical reader cannot fail to admire the simple, direct language in which the doctor expresses his opinions, and it would require but little acquiescence in his arguments to justify one in accepting his conclusions.

Nevertheless a more careful reading leaves the mind dissatisfied with his implication that such a thing as mind has no existence, but is merely *"a mode of action and reaction of organisms responding to external influences,"* and one cannot avoid the idea that to study a wrecked machine is not the best way to learn its origin. His postulate indicates that the

doctor is repeating the old mistake of confusing actor and action, mind and thought as one. If, as he says, life and mind are not things, but "actions and reactions of," say the corpus striatum, which is supposed to be the seat of consciousness; and if the moving influence must come from without, he leaves unaccounted for those more profound thoughts and meditations that have led the minds of great thinkers to contemplations far beyond and above any material "influences," external or internal. In such an instance it is the thing that thinks, that causes the "action and reaction of organisms," which it uses as tools to limn its pictures and frame its words, and not the reverse.

To illustrate his meaning the doctor talks of the instability and ready explosion of complex molecules containing nitrogen, and cites the irresistible power of nitroglycerine, the under truth of whose action remains unknown. Here again the illustration is inadequate, for the explosions of such molecules, slow like those of neuron cells, or instantaneous like nitroglycerine, would inevitably have one characteristic in common; they would be insensate, definite, symmetrical; exerting their force equally in every direction, unless controlled and directed by some purposeful entity that could so direct those neuron-cell explosions as to make them suggest images and words representing thought.

No undirected explosion or reaction responding to some unconscious "external influence," or undiscoverable chemical action could guide the thoughts hour after hour in silence and darkness along the trackless thread of meditation to the means of weighing a sun or an atom, or the operations of a cosmic law.

Neurons, nerves, chemicals, reactions, the beasts posses them all; but man alone holds the key to *abstract* thought, free from suggestion from without or within.

What that divine, creative element is we know no more than we know the atomless structure of the boundless ether. Nor whence, nor for how long. Perhaps it has been evolved *pari passu* with the development of the race from lower levels. Perhaps it still advances, though physically improvement has halted.

Where it will end, for what reason it was imposed with all its capacity for ambition and hope, for sorrow and despair, for that supreme conception, God, only the Designer knows. And that such a Designer exists, though beyond the very shadow of the imagination, must be true. Too much care has been exercised to develop that gift of abstract reasoning in the race for it to be merely a ghastly accident.

BOOK REVIEWS.

INTERNATIONAL CLINICS.

A Quarterly of Illustrated Clinical Lectures and Specially Prepared Original Articles.

These quarterly bound volumes are models of what a book devoted to the enlightenment and information of physicians should be. The work is piling up, volume by volume, a monument to the memory of its editor, Henry W. Cattell, A.M., M.D., that will speak of him in terms of praise long after his physical presence is no more.

The successive numbers are uniform in excellence. Volumes III and IV lie on the reviewer's table. The one first mentioned presents articles by twenty-one writers, among whom are Ballantyne, of the Edinburgh Royal Maternity and Simpson Memorial Hospital; Bradford, of Harvard University Medical School; Christen, of Berne; Jardine, of Glasgow; Kopetzky, of New York Red Cross Hospital; Tice, of Chicago; and Walsh, of Fordham University School of Medicine.

Some of its themes are: "Some Uses for Old Drugs;" "Fasting," by Mapes, of Kentucky; "Refraction for the General Practitioner," by Zentmayer; and "Economic Conditions Affecting Physicinas."

The book is full of illustrations. One especially striking series illustrates a huge aneurysm of the innominate artery. The text and the drawings and photographs make one of the most valuable clinics imaginable. The clinician is F. Griffith, M.D., of New York. But this is only one out of the more than a score of splendid clinics presented in Volume III of Series 21. Volume IV is of equal value with the above. It is devoted to the following named subjects:

"Treatment," 5 papers; "Geriatics," (disease of senility), 2 papers; "Diagnosis," 3 papers; "Economics of Medicine," 2 papers; "Medicine," 4 papers; "Surgery," 3 papers; and "Otology," "Pediatrics," "Medico Legal" and "History of Medicine," each one paper. There are over 75 plates and figures for illuminating the meaning of the text.

In this volume as in the other the catholicity of the editor is shown by the widely scattered centers from which the writers are selected, ranging from Canada to Kentucky, from New York to San Francisco.

Finally it is a wonderful circumstance that the publishers are able to present these volumes at the low rate of $2.00 each. They are published by the J. B. Lippincott Company, Philadelphia and London.

THERAPEUTICS

THE USE OF ETHICAL PREPARATIONS.

The official preparations of the United States Pharmacopoeia and the National Formulary are deserving of careful and conscientious study by the physician. With an aggregate of some fifteen hundred such preparations to select from, they should, in reality, constitute the modern medical man's armamentarium in his fight against sickness and disease.

The more these medicinal agents are used and studied, the better they are liked, for the very simple reason that they are real therapeutic agents, with a definite pharmacological action, and, if properly employed will always perform a definite service and one to be depended on. In this manner each one becomes a powerful and true weapon which the physician can place dependence.

Such service cannot be given by any preparation of unknown composition, because, as every physician knows, *if you do not know exactly what a thing is, you cannot state definitely what it will do.* It may be inert for the purpose, or it may be extremely mischievous and detrimental. It is like a child playing with fire.

There is a decided stimulus in things medicinal at the present time, hence we are anxious to awaken a more widespread recognition of the basic principles of this rational materia medica, as represented by the medicaments of the United States Pharmacopoeia and National Formulary. By studying the composition, dosage and pharmacological action of these preparations, the medical profession, as represented by the individual practitioner, can rid itself of much of the over confidence in complex mixtures, specialties and nostrums.

Any capable pharmacist can make these preparations, for a trained and expert operator considers it both his duty to make them and also, his privilege. He is trained to do this work, just as a physician is trained to locate, diagnose and cure disease and sickness.

Two Excellent Remedies.

The following two preparations are most excellent ones from a therapeutic viewpoint, and a thorough familiarity with them will undoubtedly lead the prescriber to employ them as a first choice in the pharmacological conditions indicated:

Elixir Sodii Salicylatis, N. F.

Composition—The elixir sodium salicylate contains 5 grains (0.34 Gm.) of pure sodium salicylate in each fluidram (4Cc.), in a vehicle of aromatic elixir. It is always prepared fresh by the pharmacist when required for use.

Dose—The average dose of this elixir is one fluidram (4Cc.), after meals, and well diluted. A much larger dose than five grains of this salt is often to be administered, sometimes as high as thirty grains. This is readily accomplished by prescribing (in the case of thirty grain doses), 240 grains of the salicylate to each fluidounce of the mixture.

Therapeutics—The chief use of this preparation is in acute rheumatism, acting as an anodyne and antipyretic; it also lessens the

liability to cardiac complications and shortens the duration of the attack. It is a powerful diaphoretic and an efficient cholagogue.

Remarks—Tablets of sodium salicylate should receive little favor from the physician, as their action is generally very irritant, unless accompanied by large draughts of water. They are frequently so hard as to resist all action in the secretions of the stomach and intestines.

According to Moule, sodium salicylates is a specific in acute rheumatism, but it must be used in larger doses at first than those commonly employed; in severe cases thirty grains every hour.

Sodium salicylate is incompatible with mineral acids or with any preparation containing such.

Thymolis Iodidum, U. S. P.

Thymol iodide is a bright chocolate-colored, or reddish-yellow, bulky powder, with a very slight aromatic odor; it contains forty-five per cent of iodine. It is insoluble in water and glycerine, but readily soluble in fixed oils. It was formerly trade-marked as "Aristol."

Thymol iodide is a valuable antiseptic, similar to iodoform. It has the advantage, however, of being less toxic and practically odorless. It may be used as a dusting powder, in ointment or in a solution of liquid petrolatum of about ten per cent strength.

This chemical possesses, in a mild degree the antiseptic properties of its component ingredients, thymol and iodine. Its action is, as a rule, mild, and its greatest activity is made apparent in nasal and aural affections requiring mild antisepsis. It also favorably influences the course of many cutaneous affections, wounds and sores.

The principal action of this chemical, however, does not reside in its antiseptic properties, but more especially in its direct effect upon the tissues in granulating surfaces, pharmacologists have not definitely established its peculiarly beneficial action, but it appears to diminish the secretion of the wounded surface and in this manner affords a less suitable medium for the growth of any germs that may be present.

ELATERIN.

Elaterinum, elaterin is derived from the plant Ecballium Elaterium or "squirting cucumber."

The derivative comes in small, white, prismatic crystals, almost insoluble in water and slightly so in alcohol.

It is one of the most powerful of the hydragogue cathartics, causing, when given in full therapeutic doses, profuse, watery discharges from the bowels, sometimes accompanied by great prostration. Its use is always attended with some danger if results are to be assured. It is sometimes given as a derivative in apoplexy and congestion of the brain. It has proved very efficient in removing dropsical accumulations in the peritoneal cavity, the doses being carefully graded and the system fortified with strychnine and digitalis, or other heart stimulants. It should not be given to aged, weak patients, or those suffering with heart trouble. The dose of elaterin is from 1-20 to 1-12 of a grain (0.003-0.12 gm.). Trituratio elaterini, elaterin triturate is elaterin diluted with 9 parts of milk sugar, rendering it easier to accurately measure the dose. From 1-4 to 3-4 grain (0.016-0.048 gm.) may be given, repeated in four hours if necessary.

OLEUM TIGLII.

Oleum Tiglii, croton oil is an exceedingly irritating and powerful hydragogue cathartic. The oil is dusky yellow in color, with a nauseous, acrid taste and odor.

Externally croton oil is used as a counter-irritant, where the irritation requires to be maintained for a considerable period of time. It causes an eruption of pustules which resemble those of variola which heal under scabs, and often leave scars. It is seldom thus used in full strength, its excessive action being modified by dilution. The British Pharma-

copoeia recommends an admirable mixture for this purpose under the name of "Linimentum Crotonis." It is composed of one part of the oil and three and a half parts each of alcohol and oil of cajeput.

One part of the oil to seven of cottonseed oil is a proportion often used in this country. This can be rubbed over the affected regions once in twenty-four hours until the proper degree of pustulation is secured. Pulmonary tuberculosis, for the sharp, lancinating pains that often characterize it, for bronchitis, pleurisy, rheumatism, etc., seems to obtain relief from pain under its effects. Sometimes its external application is followed by catharsis.

Internally croton oil is used as hydragogue cathartic when speedy results are necessary. Where patients are unconscious, as in apoplexy, eclampsia or congestion of the brain, a drop of croton oil floating on a tablespoonful of water and poured down the throat will cause free purgation in one or two hours. Croton oil made into pills with breadcrumbs can be divided into doses as small as desired, and in this form is sometimes given in obstinate constipation, beginning with a dose of 1-4 of a drop (0.016 c.c.). It is also given combined with soda and compound extract of colocynth, the alkali increasing its cathartic powers. Shaking croton oil with alcohol and then allowing them to separate is said to remove an acid which is the cause of its acrid character.

Wilcox says that "It has now been determined that the subcutaneous injection of croton oil, provided that it contains free acid, is capable of causing the formation of pus without the presence of microbes, which were formerly thought by many to be necessary for such action."

It is not advisable to administer this drug to children or very weak people excepting in very urgent cases, and then only in small amounts repeated with care.

The dose of croton oil is stated as one drop (0.06 c.c.), but it is generally safer to divide the drop into four or more parts. As little as the 1-50th of a drop has caused satisfactory purgation (0.0012 c.c.). Fatal inflammation of the intestinal tract may follow overdoses, though generally such cause free vomiting and purging and thus relieve the system with only temporary distress or damage.

THE TREATMENT OF TENOSYNOVITIS OF THE INDEX FINGER.

This procedure, says Kanavel (Infection of the Hand, Lea & Febiger, Publishers, Philadelphia), will vary according to the form of infection and the amount of destruction present. The first incision is made at the site of known infection, opening the sheath at the side and not in the median line, cutting the length of the shaft of the proximal or middle phalanx, leaving the part over the articulation uncut, unless there is doubt as to the freedom of drainage, so that the tendon does not prolapse. I wish to insist that the first requisite is adequacy of the opening for drainage, since a small incision soon becomes closed by prolapsing tissue. Make the incision too free rather than too small.

In those cases where it has seemed advisable to incise the length of the sheath, and I do this in case of doubt, I have bound the finger out in an extended position to prevent prolapse of the tendons. After having opened the sheath at this one point, pressure upon its various parts will give one some idea of the extent of the invasion. If it is complete, as is generally the case, a similar incision is made over the uncut proximal or middle phalanx. No incision is necessary, as a rule, over the distal phalanx, and in making this I feel that Klapp is in error, if his drawing represents his technique correctly. Over the proximal end of the sheath, at the base of the palm, the technique will vary according to the extent of the invasion. If early, the incision is made over the middle of the sheath at its end in the palm, carrying it from the flexion crease at the base of the proximal phalanx for

about three-fourths of an inch into the palm. If, however, there is some question whether the lumbrical spaces at the sides have begun to become involved (vide supra), the incision is made upon the side most affected, opening the space and the tendon sheath at the same time. If both sides are involved, two incisions are made. The finger is now cleansed and examined. If the amount of pus is great, a second line of incisions is made upon the opposite side of the finger over the two proximal phalanges by inserting the knife blade through from the incision already made on the one side. If there is much involvement of the synovial surfaces, or if there is much edema of the finger, which would tend to close the incisions, I connect the two first incisions made, thus making one incision the length of the finger rather than multiple incisions on both sides of the finger.

HOW TO PREVENT TYPHOD FEVER.

The above title heads "Farmer's Bulletin 478," issued by the United States Department of Agriculture. It gives a great deal of useful information on the subject of anti-typhoid vaccination, couched in simple words, but on the whole it is worthy of the attention of any doctor whose environment makes typhoid fever a matter of much practical interest to him.

After a brief but convincing history of its use, wherein its early failures are accounted for and its present almost incredible successes recorded, plain directions for its use are given, some of which are as follows:

The skin is painted with iodine before and after the hypodermic injection.

The inoculating material is sent in a small glass tube, the surface of which should be washed with an antiseptic before it is opened. It may then be entered by making a few cuts at the top with a clean file. The syringe used should be thoroughly sterilized by boiling immediately before use. The inoculating material should preferably be drawn out of the container by means of the syringe. If it is emptied out into anything else beforehand, that receptacle must be sterilized in advance. The syringe and needle should be sterilized by boiling in 2 per cent soda solution. It is best to sterilize the piston separately, so that the full length of the barrel shall be exposed to the boiling water. A fresh needle must be used on each man, or, if not, it must be plunged in the boiling soda solution to resterilize it.

The most suitable time for administration is about 4 o'clock in the afternoon, as the greater part of the reaction is then over before morning. As already stated, no applicant should be immunized who is not perfectly healthy and free from fever at the time. In case of any man who has fever, the inoculation should be postponed until he recovers. This precaution is necessary in order to avoid its administration to men who may be coming down with typhoid or other fevers. It is strongly advised not to drink beer or other alcoholic liquors during and for a day or two after inoculation.

The reactions from the inoculations are two: A moderate local swelling and a slight general fever. These are of shorter duration and usually much less severe than similar inoculations for smallpox. The entire reaction is over in forty-eight hours, and during this time severe labor should be avoided. It is stated by the Surgeon-General's office that no untoward results of any kind have ever been noted.

Any of the prophylactic remaining unused should be thrown away and a fresh vial opened for the day's use. It should be stored in the ice box. Nothing is gained by making the inoculations at closer intervals than the ten days. The production of large quantities of anti-bodies does not become evident until eight or ten days after the inoculation. It is not believed that there is any increased susceptibility following the first dose, but that increased resistance begins immediately, although the degree of immunity produced is not very high until after a lapse of ten days.

The first dose consists of ½ c. c. (7½ minims); the second and third doses of 1 c. c. (15 minims) of a young sterilized typhoid culture. The inoculations are made at intervals of ten days; the entire course thus requires twenty days. The inoculation is always made under the skin, never into the skin nor into the muscle. The site usually selected is the arm at the insertion of the deltoid muscle. The arm should be cleaned as for any other operation. The Surgeon-General's office recommends washing the arm in tincture of idoine diluted in an equal volume of alcohol.

The bulletin can be had by writing for it to United States Department of Agriculture, Washington, D. C.

PHENOLPHTHALEIN.

Phenolphalein is a synthetic drug of the phenol series. It is claimed to be a safe, certain and unirritating laxative or purgative according to the dose. Its effect seems to be principally upon the glandular elements, increasing the flow of serum, together with an accelerating influence over peristalsis. It enters into the composition of an effective formula prepared by a manufacturing firm. The

product is named pill Alophen. The published formula is as follows:

R—Aloin .....gr. 1-4
Strychniae pulvis ....gr. 1-80
Extract belladonnae foliae .....gr. 1-12
Ipecacuanhae pulvis .....gr. 1-15
Phenolphthalein .....gr. 1-2
Misce. fiat pilula.....No. 1

Dose—One or two at bedtime.

The amount of strychnine seems unnecessarily large, if more than one pill is taken. A case of poisoning from taking 15 grains (1 Ggm.) is reported. The Council on Pharmacy and Chemistry of the American Medical Association states that eight grains (0.5 gm.) may be safely taken, and that doses of such amounts seem to be necessary in "bedridden patients of obstinate cases."

EXODIN is another new claimant for favor as a laxative. said to cause mild increase of peristalsis and secretion, and to exert a tonic influence over the digestive tract. Dose, 15 to 22 grains (1.0-1 1-2 gm.) It is sold in 7 1-2 grain tablets (0.03 gm.).

PURGATIN is a drug also claiming gentle laxative powers in doses of from 7 1-2 to 15 grains (0.03 gm.).

REGULIN is a recent compound of extract of cascara sagrada with agar agar. The disguise is perfect, the bitter taste being entirely destroyed. One to three teaspoonfuls daily in stewed fruit or rice is the dose.

COLOCYNTHIS.

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.....gr.XX (1.29 gm.)
Extractum Rhei.....gr. X (0.6 gm.)
Extracti Hyoscyami.....gr. X (0.6 gm.)

Misce. Fiat pilulae 10. Signa: One pill every four hours till effect.

ABSTRACTS AND COMMENTS.

NOTES ON THE TECHNIC OF SUTURING BLOOD VESSELS WITH A NEW INSTRUMENT.

(Abstract of a paper by Dr. J. Shelton Horsley, read at a meeting of the Southern Surgical and Gynecological Association, at Washington, D. C., December 12-14, 1911.

Dr. Horsley, of Richmond, Va., described a new technic for suturing blood vessels by means of an instrument that holds the guy sutures in position and keeps the margin of the arterial wound everted. A continuous mattress suture of fine silk is used with a number sixteen straight needle. The instrument consists of a shaft, or handle, six inches long, which curves at one extremity into a shorter shaft one and three-quarter inches long. The curved portion is flattened out so as to form a light spring. The short shaft occupies an angle of fifty-five degrees to the long shaft. Buttons are placed in such a posi-

tion that when three guy sutures in the blood vessel are wrapped around them the circumference of the vessel is pulled into the shape of a triangle. One of the chief difficulties in suturing blood vessels is managing the guy suture, which is obviated by this method. The continuous mattress suture does not tend to cut the vessel wall, and leaves but little thread exposed in the lumen while making accurate approximation. No skilled assistant is required. After the guy sutures have been fixed on the instrument the tension along the arterial margins remains the same throughout the operation. A point of leakage can be easily demonstrated by pressing the short shaft toward the long shaft, which relaxes the guy sutures. If there is a spurting point, the Crile clamps are reapplied and the point sutured while the blood vessel is still held by the instrument. Several specimens were exhibited. This method can be used either for suturing arteries or for transfusion of blood. In transfusion of blood a point in the vein should be selected near a branch and the branch clamped with mosquito forceps. Often the radial artery contracts so greatly as almost to shut off the flow of blood. When this occurs, a probe anointed with vaseline can be run through the venous branch, through the site of anastomosis, and up into the radial artery, thoroughly dilating it. This will be impossible with a metal cannula without seriously injuring the intima. The venous branch also acts as a gauge to indicate the rate of flow.

CORRESPONDENCE

AMOEBA IN PELLAGRA.

MEMPHIS, TENN., Feb. 2, 1912.

DEAR EDITOR: Since my paper was read in Hattiesburg, I have seen a number of pellagrins, in all of whom I have found the ameba.

In this case, photograph of which is herewith enclosed, I observed the amoeba bacilli in numbers. These were rod shaped. The appendicostomy will be observed, as also the higher or Beven incision through which the liver and other organs are first inspected. I am sure this case would long since have died if this means had not been provided for washing out the necrotic and toxic material and ingesta

The diet was changed from albumen and buttermilk to sweet milk and rachahout (or infant food) and in about forty-eight hours violent toxin poisoning, with exaggerated symptoms was noted, but irrigations with large quantities of warm salt solutions (one to three gallons daily) and a resumption of proper diet has brought about improvement in about forty-eight hours, which improvement has been continuous to this time. He is now up a good deal of the time rolling around the hospital. His skin has cleaned off and is clear, his tongue also is clean and moist, he has ceased his restless muttering and groaning in his s'eep, and is taking an interest in things about him.

I believe he will ultimately recover.

Fraternally,

JNO. L. JELKS, M.D.

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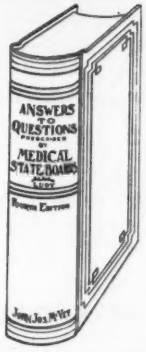

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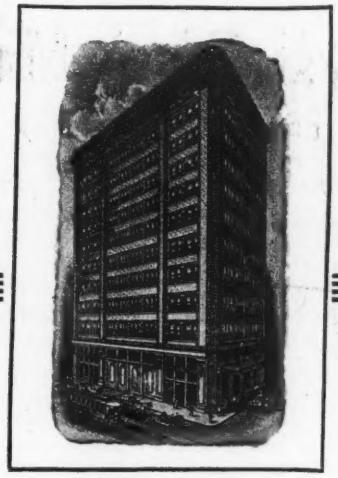

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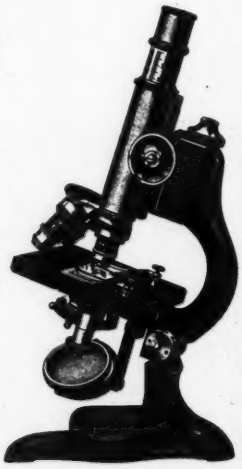

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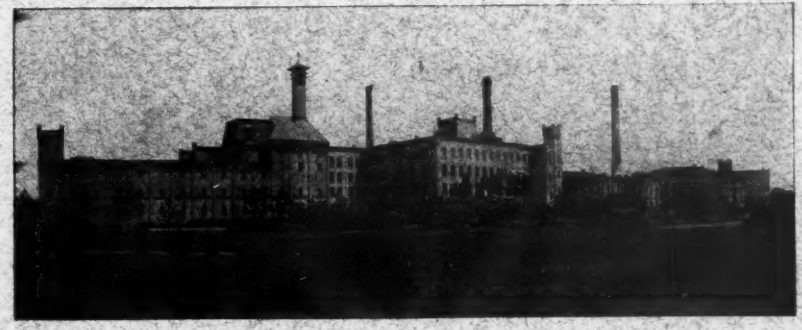

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